

# FINANCIAL ACCOUNTING

**B.Com. (Gen, A & F, CS, CA)**



**Dr. C. B. Senthil Kumar**  
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**Kripa Drishti Publications, Pune.**

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## **PREFACE**

It is a matter of great pleasure to present the book on **Financial Accounting B.Com.** (Gen, A&F, CS, CA) to the Students and Teachers of Bachelor of Management and studies started by University of Dr. M.G. R. Educational and Research Institute. This book is written on lines of syllabus instituted by the university.

The book uses clear, persuasive language to convey its subject. This book is specifically made to appeal to students majoring in accounting as well as those not, introducing them to the fundamentals of accounting in approachable ways that will help them develop a solid foundation that they can use in a variety of business fields. Every chapter begins with a realistic scenario that can be related to by today's college students. Each chapter contains carefully crafted examples that let students expand on their growing accounting knowledge. Applying links to more intricate business processes helps to further solidify concepts.

In order to prevent disagreements over the precise scope of the syllabus, each chapter's contents are listed in the syllabus. The text adheres to the syllabus's term-by-term, chapter-by-topic format. In order to provide students with a simplified explanation of the subject, we decided to leave the section text and rules exactly as they are and then add comments. Any potential misunderstanding may have arisen while attempting to explain in a simplified manner.

This book is a unique presentation of subject matter in an orderly manner. This is a student-friendly book and tutor at home. We hope the teaching faculty and the student community will find this book of great use.

We are extremely grateful to Mrs. Rajani Adam of Kripa Drishti Publications, Pune for their devoted and untiring personal attention accorded by them to this publication.

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# Unit 1

## Part - A

### 1. Define Accounting.

According to the American Institute of Certified Public Accountants “Accounting is the Art of recording, classifying and summarizing in a significant manner and in terms of money, transactions and events which are in part, at least of a financial character and interpreting the results thereof”.

### 2. What are the golden rules of accounting?



### 3. Explain the meaning of accounting equation.

The Accounting Equation is based on the double entry accounting, which says that every transaction has two aspects, debit and credit, and for every debit there is equal and opposite credit. It helps to prepare a balance sheet, so it is also called the Balance Sheet Equation.

The Accounting Equation is:

$$\text{Assets} = \text{Liabilities} + \text{Owners Equity}$$

### 4. What are the stages in accounting cycle?

The sequence of six steps in the processing of financial transactions (from the time they occur to their inclusion in financial statements) pertaining to an accounting period. These steps are: (1) analyzing the transactions as they occur, (2) recording them in the journals, (3) posting debits and credits from journal entries to the general ledger, (4) adjusting the assets with a trial balance, (5) preparing financial statements, and (6) closing the temporary accounts.

**5. Journalize the following transactions:**

2006		Rs.
April 1	Purchased goods for cash	5,000
June 9	Purchased goods from Jai	10,000
July 10	Paid to Jai	9,000

**Solution:**

**Journal Entries:**

Date	Particulars	L.F	Debit (Rs.)	Credit (Rs.)
1/4/2006	Purchased A/c Dr		5,000	
	To Cash A/c			5,000
	(Being Purchased goods for cash)			
9/6/2006	Purchased A/c Dr		10,000	
	To Jai A/c			10,000
	(Being Purchased goods from Jai)			
10/7/2006	Jai A/c Dr		9,000	
	To Cash A/c			9,000
	(Being Paid to Jai)			

**Part - B**

**1. What are the objectives of accounting?**

**A. Identification and recording of transactions:**

The primary object of accounting is to identify the financial transactions and to record these systematically in the books of accounts. As a result, the true nature of each and every transaction is known without much exercise of memory.

With this end in view the transactions are primarily recorded in general and in a special journal and later on permanently various accounts are kept in the ledger.

**B. Ascertainment of results:**

Every business concern is interested to know its operating results at the end of a particular period. The amount of profit or loss for a particular period of a business concern can be ascertained by preparing income statement with the help of ledger account balances of revenue nature. Surplus or deficit of revenue for a particular period of a non-trading concern can also be ascertained by preparing income and expenditure account or statement.

**C. Ascertainment of financial affairs:**

Ascertainment of debts-liabilities, property, and assets i.e., total financial affairs of an organization at a particular date is another important object of Accounting. Financial affairs of a concern at a particular date can be ascertained by sheet. The balance sheet is the statement of assets and liabilities of a concern at a particular date.

**D. Keeping accounts of cash:**

**Cash book** is a prominent book of the books of accounts. Cash receipts and cash payments are accounted for in this book. A number of daily cash receipts, payments, cash in hand and cash at the bank can be known from this book. Fraud, forgery, and misappropriation of money are reduced by keeping cash book scientifically and accurately.

**E. Control over assets and liabilities:**

For running a business successfully, a businessman is to acquire various assets like land, building, machinery etc. He is to face various debts and liabilities like accounts payable, notes payable, loan, bank overdraft etc. side by side with the acquisition of assets. The actual position of these debts-liabilities, property, and assets can be ascertained through the proper keeping of accounts. A businessman can take the right steps for controlling the quantity of assets decrease and liability increase.

**F. Controlling money defalcation and cost:**

Prevention of money defalcation through fraud and forgery and controlling of the cost of a concern are also the main objects of accounting. Prevention of money defalcation and cost control become easier if accounts are kept scientifically.

**2. What are the types of subsidiary books? And explain it briefly.**

Types of Subsidiary Books

- **Cash Book:** It is a book which records the receipts and payment of cash transaction.
- **Purchase Book:** It is a book which records all the credit purchases of goods of the company.
- **Purchase Return Book:** It is a book which records all the return of credit purchases of goods of the company.
- **Sales Book:** It is a book which records all the credit sales of goods of the company.
- **Sales Return Book:** It is a book which records all the return of credit sales of goods of the company.
- **Bills Receivable Book:** It is a book which records all the bills receivable.
- **Bills Payable Book:** It is a book which records all the bills payable.
- **Journal Proper:** All the transactions which are not recorded in the above books are recorded here.

**Single Column Cash Book:**

**3. Enter the following transactions in a simple Cash Book of Mr. Gem**

1999		Rs.
Apr,1	Commenced Business with cash	24,000
5	Bought goods for cash	6,000
10	Goods sold for cash	11,200
13	Paid into Bank	2,500
14	Sold goods to Ganesh on Credit	9,000
15	Bought goods from Mohan on Credit	13,600
20	Purchased furniture	9,600
21	Purchased stationery	160
23	Received Cheque from Ganesan	9,000
25	Paid Mohan	13,600
26	Received Commission	740
27	Paid Telephone Charges	300
30	Drawn from Bank	3,800

**Solution:**

**Cash Book of Mr. GEM (Single column)**

Date	Particulars	R. N	V.N	Amount (Rs.)	Date	Particulars	V.N	L.F	Amount (Rs.)
1999					1999				
Apr, 1	To Capital			24,000	Apr, 5	By Purchases			6,000
10	To Sales			11,200	13	By Bank			2,500
23	To Ganesan			9,000	20	By Furniture			9,600
26	To Commission			740	21	By Stationery			160
30	To Bank			3,800	25	By Mohan			13,600
					27	By Telephone Charges			300
					30	By Balance C/d			16,580
				48,740					48,740
May,1	To Balance C/d			16,580					

**Trial Balance:**

**4. From the following ledger balance of Yeses Enterprises, Prepare Trial balance as on 31st March 2009.**

Particulars	Amount Rs.
Capital	50,000
Sales	1,77,000
Return Outwards	750
Opening stock	30,000
Discount (Cr)	800
Sundry Debtors	45,000
Salaries and Wages	16,800
Bad debts Provision	525
Advertisement	10,000
Discount (Dr)	350
Bank charges	125
Creditors	25,000
Carriage Inwards	700
Carriage Outwards	1000
Rent	10,200
Cash in hand & Bank	6,900
Plant & Machinery	72,000
Purchases	60,000
Return Inwards	1,000

**Solution:**

**Trial balance of Yeses Enterprises as on 31st March 2009.**

Particulars	Debit (Rs.)	Credit (Rs.)
Capital		50,000
Sales		1,77,000
Return Outwards		750
Opening stock	30,000	
Discount (Cr)		800
Sundry Debtors	45,000	
Salaries and Wages	16,800	
Bad debts Provision		525

*Financial Accounting*

Particulars	Debit (Rs.)	Credit (Rs.)
Advertisement	10,000	
Discount (Dr)	350	
Bank charges	125	
Creditors		25,000
Carriage Inwards	700	
Carriage Outwards	1,000	
Rent	10,200	
Cash in hand & Bank	6,900	
Plant & Machinery	72,000	
Purchases	60,000	
Return Inwards	1,000	
	254075	254075

**Journal Entries:**

**5. Journalize the following transaction in the books of Kirti for the year 2006**

	Rs.
Mar 1 Started business with cash	1, 10,000
Mar 1 Stock	20,000
Mar 1 Plant and Machinery	30,000
Mar 2 Paid wages for installation of Machinery	2,500
Mar 3 Paid into bank	80,000
Mar 5 Purchased goods from Sachin for cash	6,000
Mar 8 Sold goods to Ashish	10,000
Mar 13 Purchased a motor bike for personal use	15,000
Mar 16 Ashish returned goods	2,000
Mar 21 Received from Ashish in full settlement	7,850
Mar 24 Cash sales	3,800
Mar 27 Rent paid	4,000

**Solution:**

**Journal Entries in the books of Kirti for the year 2006**

Date	Particulars	L.F	Debit (Rs.)	Credit (Rs.)
01-03-2006	Cash A/c		1,10,000	

Date	Particulars	L.F	Debit (Rs.)	Credit (Rs.)
	To Capital A/c			1,10,000
	(Being Started business with cash)			
01-03-2006	Stock A/c Dr		20,000	
	To Cash A/c			20,000
	(Being Stock)			
01-03-2006	Plant and Machinery A/c Dr		30,000	
	To Cash A/c			30,000
	(Being Plant and Machinery)			
02-03-2006	Wages A/c Dr		2,500	
	To Cash A/c			2,500
03-03-2006	Bank A/c Dr		80,000	
	To Cash A/c			80,000
	(Being Paid into bank)			
05-03-2006	Purchased A/c Dr		6,000	
	To Cash A/c			6,000
	(Being Purchased goods from Sachin for cash)			
08-03-2006	Ashish A/c Dr		10,000	
	To Sales A/c			10,000
	(Being Sold goods to Ashish)			
13-03-2006	Drawing A/c Dr		15,000	
	To Bank A/c			15,000
	(Being Purchased a motor bike for personal use)			
16-03-2006	Sales Return A/c Dr		2,000	

*Financial Accounting*

<b>Date</b>	<b>Particulars</b>	<b>L.F</b>	<b>Debit (Rs.)</b>	<b>Credit (Rs.)</b>
	To Ashish A/c			2,000
	(Being Ashish returned goods)			
21-03-2006			7,850	
	Cash A/c Dr			
	To Ashish			7,850
	(Being Received from Ashish in full settlement)			
24-03- 2006				
	Cash A/c Dr		3,800	
	To Sales A/c			3,800
	(Being Cash Sales)			
27-03- 2006			4,000	
	Rent A/c Dr			
	To Cash A/c			4,000
	(Being Rent Paid)			
29-03- 2006			1,300	
	Telephone charges A/c Dr			
	To Cash A/c			1,300
	(Being Telephone Charges paid)			
31-03- 2006				
	Wages A/c Dr		6,000	
	To Cash A/c			6,000
	(Being Wages Paid)			

### **Part - C**

#### **1. What are the accounting concepts and conventions?**

##### **Accounting Conventions:**

The most commonly encountered convention is the "historical cost convention". This requires transactions to be recorded at the price ruling at the time, and for assets to be valued at their original cost.

Under the "historical cost convention", therefore, no account is taken of changing prices in the economy.



The other conventions you will encounter in a set of accounts can be summarized as follows:

**Monetary measurement:** Accountants do not account for items unless they can be quantified in monetary terms. Items that are not accounted for (unless someone is prepared to pay something for them) include things like workforce skill, morale, market leadership, brand recognition, quality of management etc.

**Separate Entity:** This convention seeks to ensure that private transactions and matters relating to the owners of a business are segregated from transactions that relate to the business.

**Realization:** With this convention, accounts recognise transactions (and any profits arising from them) at the point of sale or transfer of legal ownership - rather than just when cash actually changes hands. For example, a company that makes a sale to a customer can recognise that sale when the transaction is legal - at the point of contract. The actual payment due from the customer may not arise until several weeks (or months) later - if the customer has been granted some credit terms.

**Materiality:** An important convention. As we can see from the application of accounting standards and accounting policies, the preparation of accounts involves a high degree of judgement. Where decisions are required about the appropriateness of a particular accounting judgement, the "materiality" convention suggests that this should only be an issue if the judgement is "significant" or "material" to a user of the accounts. The concept of "materiality" is an important issue for auditors of financial accounts.

### **Accounting Concepts:**

Four important accounting concepts underpin the preparation of any set of accounts:

**Going Concern:** Accountants assume, unless there is evidence to the contrary, that a company is not going broke. This has important implications for the valuation of assets and liabilities.

**Consistency:** Transactions and valuation methods are treated the same way from year to year, or period to period. Users of accounts can, therefore, make more meaningful comparisons of financial performance from year to year. Where accounting policies are changed, companies are required

to disclose this fact and explain the impact of any change.

**Prudence:** Profits are not recognised until a sale has been completed. In addition, a cautious view is taken for future problems and costs of the business (they are "provided for" in the accounts" as soon as there is a reasonable chance that such costs will be incurred in the future.

**Matching (or "Accruals"):** Income should be properly "matched" with the expenses of a given accounting period.

**Trial Balance:**

**2. From the following extracted transactions of ledger, prepare Trial balance.**

<b>Particulars</b>	<b>Amount Rs.</b>
A. Brown's Drawings A/c	5,800
A. Brown's Capital A/c	24,000
Sundry Creditors	43,000
Bills Payable	4,000
Sundry debtors	51,000
Bills Receivable	5,200
Loan advanced to Rao	10,000
Fixture and fittings	4,500
Stock@Commencement	47,000
Cash in Office	900
Cash @ State bank	12,500
Over draft with Central bank	6,000
Purchases	50,000
Duty and clearing charges	3,500
Sales	1,28,000
Staff salaries	9,500
Return from Customers	1,000
Return to Creditors	1,100
Commission & Travel expenses	4,700
Trade expenses	2,500
Rent A/c	2,000
Discount Received	4,000

**Solution:**

<b>Trial Balance</b>		
<b>Particulars</b>	<b>Debit (Rs.)</b>	<b>Credit (Rs.)</b>
A. Brown's Drawings A/c	5,800	
A. Brown's Capital A/c		24,000
Sundry Creditors		43,000
Bills Payable		4,000
Sundry debtors	51,000	
Bills Receivable	5,200	

<b>Trial Balance</b>		
<b>Particulars</b>	<b>Debit (Rs.)</b>	<b>Credit (Rs.)</b>
Loan advanced to Rao	10,000	
Fixture and fittings	4,500	
Stock@Commencement	47,000	
Cash in Office	900	
Cash @ State bank	12,500	
Over draft with Central bank		6,000
Purchases	50,000	
Duty and clearing charges	3,500	
Sales		1,28,000
Staff salaries	9,500	
Return from Customers	1,000	
Return to Creditors		1,100
Commission & Travel expenses	4,700	
Trade expenses	2,500	
Rent A/c	2,000	
Discount Received		4,000
	<b>2,10,100</b>	<b>2,10,100</b>

**JOURNAL & LEDGER:****3. Prepare Journal and ledger from the following transaction in the book of Keshav.**

<b>2004</b>	<b>Rs.</b>
Oct 1 Started business with cash	1, 75,000
Oct 3 Deposited into bank	1, 00,000
Oct 5 Purchased goods from sonu	15,000
Oct 8 Machinery purchased from sumit	60,000
Oct 11 Cash sales to Mehta	8,000
Oct 13 Payment made to sonu	14,850
Oct 13 Discount allowed by him	150
Oct 15 Goods sold to sandhya	12,000
Oct 18 Received from sandhya	11,550
Oct 18 Discount allowed to her	450
Oct 21 Drew from bank for domestic use	5,000
Oct 26 Advertisement charges paid	2,000
Oct 31 Office salaries paid	8,200
Oct 31 Rent paid	6,800

**Solution:**

<b>Journal Entries in the Books of Keshav</b>				
<b>Date</b>	<b>Particulars</b>	<b>L.F</b>	<b>Debit (Rs.)</b>	<b>Credit (Rs.)</b>
01-10-2004	Cash A/c Dr		1,75,000	
	To Capital A/c			1,75,000
	(Being started business with cash)			
03-10-2004	Bank A/c Dr		1,00,000	
	To Cash A/c			1,00,000
	(Being Deposited into bank)			
05-10-2004	Purchased A/c Dr		15,000	
	To Sonu A/c			15,000
	(Being Purchased goods from sonu)			
08-10-2004	Machinery A/c Dr		60,000	
	To Sumit A/c			60,000
	(Being Machinery purchased from sumit)			
11-10-2004	Cash A/C Dr		8,000	
	To Sales			8,000
	(Being Cash sales to mehta)			
13-10-2004	Sonu A/c Dr		15,000	
	To Cash A/c			14,850
	To Discount Received A/c			150
	(Being Payment made to Sonu)			
15-10-2004	Sandhya A/c Dr		12,000	
	To Sales A/c			12,000
	(Being Goods sold to sandhya & Discount allowed)			
18-10-2004	Cash A/C Dr		11,550	

Journal Entries in the Books of Keshav				
Date	Particulars	L.F	Debit (Rs.)	Credit (Rs.)
	Discount Allowed A/c Dr		450	
	To Sandhya A/c			12,000
	(Being Received from Sandhya & Discount allowed to her)			
21-10-2004	Drawing A/c Dr		5,000	
	To Cash A/c			5,000
	(Being Drew from bank for domestic use)			
26-10-2004	Advertisement charges A/c Dr		2,000	
	To Cash A/c			2,000
	(Being Advertisement charges paid)			
31-10-2004	Office Salaries A/c Dr		8,200	
	Rent A/c Dr		6,800	
	To Cash A/c			15,000
	(Being Expenses Paid)			

**Double Column Cash Book:**

4. Record the following transactions in Double - column cash book in the books of JMD & Company.

2005		Rs.
Jan 1	Cash Balance	2,10,000
Jan 1	Bank Balance	1,19,000
Jan 1	Interest on investment receive through cheque, the cheque was deposited on the same day	5,000
Jan 2	Purchased goods and paid by cheque	16,000
	Discount received	1,000
Jan 5	Paid to Ganesh by cheque	21,500

Financial Accounting

2005		Rs.
Jan 6	Receive a cheque from Jai on account Rs.5,900 allowed him discount Rs.100	
Jan 8	Paid into bank	31,000
Jan 9	Purchased goods on credit from Bhagawati & co	20,000
Jan 10	Sold goods to Hari on credit	55,000
Jan 12	Paid Bhagwati & co by cheque Rs.18,000 and discount received Rs.2000	
Jan 13	Hari paid by cheque in full settlement of his account	53,000
Jan 15	Paid hari's cheque into bank	18,000
Jan 18	Withdrew from bank	4,500
Jan 20	Paid wages by cheque	7,000
Jan 22	Received from Mohan	20,000
Jan 25	Cash sales	
Jan 30	Cheque received from Jai, deposited into bank	

**Solution:**

Books of JMD & Company. Double Column Cash Book									
Date	Particulars	L.F	Cash (Rs.)	Bank (Rs.)	Date	Particulars	L.F	Cash (Rs.)	Bank (Rs.)
2005 Jan,1	To Balance b/d		2,10,000	1,19,000	2005 Jan,2	By Purchases A/c			16,000
1	To Interest on investment			5,000	5	By Ganesh's A/c			21,500
6	To Jai A/c		5,900		8	By Bank	c	31,000	
8	To Cash A/c	c		31,000	12	By Bhagwati & co A/c			18,000
13	To Hari's A/c		53,000		15	By Bank A/c	c	53,000	
15	To Cash A/c	c		53,000	18	By cash A/c	c		18,000
	To Bank A/c								

Books of JMD & Company. Double Column Cash Book									
Date	Particulars	L.F	Cash (Rs.)	Bank (Rs.)	Date	Particulars	L.F	Cash (Rs.)	Bank (Rs.)
18		c	18,000		20	By wages A/c			4,500
22	To Mohan's A/c		7,000		30	By Bank A/c	c	5,900	
25	To Sales A/c		20,000		31	By Balance c/d		2,24,000	1,35,900
30	To Cash A/c	c		5,900					
			3,13,900	2,13,900				3,13,900	2,13,900
Feb,1	To Balance b/d		2,24,000	1,35,900					

Date	Particulars	Rs.
<b>Aug- 99</b>		
1	Cash balance Bank	20,000
	Balance	23,000
3	Paid rent by cheque	5,000
4	Cash Received on account of Cash sales	6,000
6	Payment for Cash purchases	2,000
8	Deposited into Bank	8,000
9	Bought goods by cheque	3,000
10	Sold goods to Nathan on credit	7,120
12	Received Cheque from MadanDiscount allowed to him	2,900
		100
13	Withdrew from Bank for office use	4,350
14	Purchased furniture by cheque	1,260
15	Received a Cheque for Rs.7,000 from Nathan in full settlement of his account, which is deposited into Bank	
17	Withdrew cash for personal use from the Bank	1,200
18	Swamy, our customer has paid directly into	

Date	Particulars	Rs.
	our Bank A/C	4,000
19	Parthi settled his account for Rs. 1,250 by giving a cheque for	1,230
20	Parthi's Cheque sent to Bank for Collection	
21	Received from Ravi a currency note for Rs.1,000 and gave him change for it.	
22	Received Cheque from Kamal for Rs.6,000 in full settlement of his account of Rs.6,200 Deposited Kamal's cheque into Bank	
25	Paid into Bank	9,000
29	Parthi's Cheque returned dishonoured.	
31	Paid Salaries	10,000

**Solution:**

**Cash Book of Mr. Anand (Three Column)**

Date	Particulars	L.F	Dis. all	Cash (Rs.)	Bank (Rs.)	Date	Particulars	L.F	Dis. Rec	Cash (Rs.)	Bank (Rs.)
1999 Aug,1	To Balance B/d			20,000	23,000	1999 Aug,3	By Rent				5,000
4	To Sales			6,000		6	By Purchases			2,000	
8	To Cash (c) To Madan A/c				8,000	8	By Bank (c)			8,000	
12	To Bank (c)	100		2,900		9	By Purchases				3,000
13	To Nathan A/c		120		7,000	13	By Cah (c)				4,350
15	To Swamy A/c				4,000	14	By Furniture				1,260
18	To Parthi A/c					17	By Drawings A/c				1,200
19	To Cash (c)		20	1,230		20	By Bank (c)			1,230	
20	To Kamal A/c				1,230	25	By Bank (c)			9,000	
22	To Cash (c)		200		6,000		By Parthi A/c				1,230
25	To Cash (c)				9,000	31	By Salaries			10,000	
						31	By Balance C/d			4,250	42,190
			440	34,480	58,230					34,480	58,230
sep,1	To Balance b/d			4,250	42,190						



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## Unit 2

**Part - A:****1. What is Gross profit?**

Gross profit is the profit a company makes after deducting the costs associated with making and selling its products, or the costs associated with providing its services.

Gross profit will appear on a company's income statement and can be calculated by subtracting the cost of goods sold (COGS) from revenue (sales)

**2. What do you understand by final accounts?**

Final Accounts gives an idea about the profitability and financial position of a business to its management, owners, and other interested parties. It is a combination of the following statement: –

- Trading Account
- Profit and loss account
- Balance Sheet

**3. What is provision for doubtful debts?**

Doubtful debts, as the name suggests, are those receivables which might become bad debts at some point in future. In other words, they are doubtful in recovery.

By analyzing the past trend, a business can ascertain the approximate percentage that becomes uncollectible every year out of the total credit allowed to buyers. This amount, thus estimated, is kept aside from the profits. This provision, made out of profits, is called Provision for Doubtful Debts. Journal Entry to Create Provision for Doubtful Debts.

<b>Profit &amp; Loss A/C</b>	<b>Debit</b>
<b>To Provision for Doubtful Debts</b>	<b>Credit</b>

*It is charged against current year's profits. Provision for doubtful debts acts as a liability for the business and is shown on the liability side of a balance sheet.*

**4. When do you prepare a manufacturing account?**

The manufacturing account is an account in the general ledger which is used to accumulate all the manufacturing costs of goods completed by a business during an accounting period. For a manufacturing business the manufacturing account needs to be prepared before completing the trading and profit and loss accounts.

**Part - B**

1. What do you mean by the term adjustment? Briefly explain different adjustments for preparation of final accounts.

**Trading Account:**

2. Prepare trading account of sanjay for the year ending 31.12.2005 from the following information.

Opening stock	80,000
Purchases	8,60,000
Freight inward	52,000
Wages	24,000
Sales	14,40,000
Purchase return	10,000
Sales Return	3,16,000
Closing Stock	1,00,000
Import Duty	30,000

**Solution:**

**Trading A/c of Sanjay for the year ended 31st Dec 2005**

Dr				Cr			
Date	Particulars	Amount (Rs.)	Amount (Rs.)	Date	Particulars	Amount (Rs.)	Amount (Rs.)
	To Opening Stock		80000		By Sales	1440000	
	To Purchases	860000			Less: Sales Returns	316000	1124000
	Less: Purchase Returns	10000	850000		By Closing Stock		100000
	To Freight inward		52000				
	To Wages		24000				
	To Import duty		30000				
	<b>To Gross Profit c/d</b>		<b>188000</b>				
			1224000				1224000

**Profit & Loss Account:**

**3. From the following balances extracted at the close of the year ended 31st Dec 2008. Prepare profit and loss account of Mr. kamal as at that date:**

	Rs.		Rs.
Gross profit	55,000	Repairs	55
Carriage on sale	500	Telephone expenses	520
Office rent	500	Interest (Dr)	480
General expense	900	Fire insurance premium	900
Discount to customers	360	Bad debts	2100
Interest from bank	200	Apprentice Premium (Cr)	1500
Travelling expenses	700	Printing & stationery	2500
Salaries	900	Trade expenses	300
Commission	300		

**Solution:****Profit & Loss A/c of Mr. Kamal for the year ended 31st Dec 2008**

Dr				Cr			
Date	Particulars	Amount (Rs.)	Amount (Rs.)	Date	Particulars	Amount (Rs.)	Amount (Rs.)
	To carriage on sale		500		By Gross Profit b/d		55000
	To office rent		500		By interest from bank		200
	To General Expenses		900		By Apprentice Premium (Cr)		1500
	To Discount to customers		360				
	To Travelling Expenses		700				
	To Salaries		900				
	To Commission		300				
	To Repairs		55				

*Financial Accounting*

Dr				Cr			
Date	Particulars	Amount (Rs.)	Amount (Rs.)	Date	Particulars	Amount (Rs.)	Amount (Rs.)
	To Telephone Expenses		520				
	To Interest		480				
	To Fire insurance premium		900				
	To Bad debts		2100				
	To Printing & Stationery		2500				
	To Trade Expenses		300				
	To Net Profit c/d		45685				
			<b>56700</b>				<b>56700</b>

**Provision For Doubtful Debts:**

4. The sundry debtors on 31st Dec.2015 are Rs. 40,000. On analysis, it is found that debtors for RS. 36,000 are good. The debtors for Rs. 3,000 are doubtful and are estimated to realize 2/3rds of amount and the debtors for Rs.1, 000 are bad. Make the provision for doubtful debts. Show the Journal, Profit & loss A/C and balance sheet.

**Solution:**

**Journal**

Date	Particulars	Amount (Rs.)	Amount (Rs.)
31-12-1995	Profit & Loss A/c <span style="float: right;">Dr</span>		
		2000	
	To Provision for Bad & Doubtful debts		2000
	(Being amount of provision for Bad & Doubtful Debts - 1/3rd of Rs.3000 i.e.,Rs.1000 doubtful and Rs. 1000 bad)		

**Ledger**

Dr		Provision for Bad & Doubtful Debts A/c			Cr
		<b>RS.</b>			<b>RS.</b>
31-12-1995	To Balance c/d	2000	31-12-1995	By Profit & Loss A/c	2000
		2000			2000
			01-01-1996	By Balance b/d	2000

Dr	Profit & Loss A/c for the year ended 31-12-95	Cr
		<b>Rs.</b>
	To Provision for doubtful debts	
		2000

Balance sheet as on 31-12-1995					
Liabilities	Rs	Rs.	Asset	Rs.	Rs.
			Sundry debtors	40000	
			Less: Provision for bad and doubtful debts		
				2000	38000

**Final Accounts (Without Adjustments):**

5. Prepare final accounts from the following information for the year ended 31st March, 2004.

Particulars	Rs.	Particulars	Rs.
Stock (opening)	10,500	Closing stock stood @	13,000
Wages	3,000	Bills receivable	1,600
Freight	1,800	Furniture and Fixtures	12,000
Carriage inwards	1,600	Cash	1,800
Commission on purchases	400	Bad Debts	850
Purchases	12,000	Debtors	5,900
Sales	22,000	Creditors	2,600
Purchases returns	700	Income tax	700

*Financial Accounting*

Particulars	Rs.	Particulars	Rs.
Sales returns	500	Withdrawals	10,000
Trade expenses	340	Bills Payable	3,090
Computers	1,00,000	Loan	1,00,000
Depreciation	1,000	Capital	85,000
Machinery	38,900	Commission on sales	500
Fax machine	10,000		

**Trading and Profit & Loss A/c for the year ended 31st March 2004**

Dr				Cr			
Date	Particulars	Amount (Rs.)	Amount (Rs.)	Date	Particulars	Amount (Rs.)	Amount (Rs.)
	To Opening Stock		10500		By Sales	22000	
	To Purchases	12000			Less: Sales Returns	500	21500
	Less: Purchase Returns	700	11300		By Closing Stock		13000
	To Wages		3000				
	To Freight		1800				
	To Carriage inwards		1600				
	To Commission on Purchases		400				
	<b>To Gross Profit c/d</b>		<b>5900</b>				
			<b>34500</b>				<b>34500</b>
	To Bad debts		850		By Gross Profit b/d		5900
	To Depreciation		1000				
	To Commission on Sales		500				
	To Trade Expenses		340				
	<b>To Net Profit c/d</b>		<b>3210</b>				
			<b>5900</b>				<b>5900</b>

<b>Balance sheet as on 31st March 2004</b>						
<b>Liabilities</b>	<b>Amount (Rs.)</b>	<b>Amount (Rs.)</b>		<b>Asset</b>	<b>Amount (Rs.)</b>	<b>Amount (Rs.)</b>
<b>Shares And Capitals:</b>				<b>Fixed Assets:</b>		
Capital	85000			Computers		100000
Add: Net Profit	3210			Machinery		38900
	88210			Fax Machine		10000
Less: Drawings	10000			Furniture and Fixtures		12000
	78210			<b>Current Assets:</b>		
Less: Income Tax	700	77510				
<b>Loans and liabilities:</b>				Cash		1800
Loan		100000		Debtors		5900
<b>Current Liabilities:</b>				Bills receivable		1600
Bills Payable		3090		closing stock		13000
Creditors		2600				
		<b>183200</b>				<b>183200</b>

## Part - C

### 1. What do you mean by grouping and marshalling in balance sheet?

The balances of real accounts and personal accounts are to be shown in the balance sheet in such a manner that the balance sheet should depict a bird's eye view of the overall financial position of the business concern. In this regard, balance sheet is prepared by grouping and marshaling various assets and liabilities of the business enterprise.

#### (i) Grouping of Assets and Liabilities:

Grouping of assets and liabilities means putting various assets and liabilities having same nature under some common headings. For example, instead of showing the names of all customers, the consolidated amount is to be shown under the head 'Sundry Debtors'. Similarly, instead of showing the names of all persons to whom amount is owed on account of goods purchased or services rendered, the consolidated amount is to be shown under the head 'Sundry Creditors'.

**(ii) Marshaling of Assets and Liabilities:**

All assets and liabilities of a business enterprise can be shown either in an order of

- (a) Liquidity or
- (b) Permanence.

The arrangement of various assets and liabilities in either of this way is called Marshaling of Assets and Liabilities.

**(a) Order of Liquidity or According to Time:**

In case of order of liquidity, an enterprise first shows the asset which is more readily convertible into cash followed by the asset which cannot be so easily converted into cash as compared to the previous one.

In the same manner, the liabilities which can be paid immediately are shown first and the liabilities which are to be paid later are mentioned after that. In short, the principles which are followed to arrange the items are from liquidity to rigidity.

**(b) Order of Permanence or According to Purpose:**

In case of order of permanence, an enterprise first records those items of assets which are more permanent and thereafter less permanent items on the assets side of the balance sheet.

In the same manner, long term liabilities are mentioned first, thereafter medium-term liabilities and after that short term liabilities are to be recorded on the liabilities side of the balance sheet.

It can be said that the rule followed for putting all items of assets and liabilities in the balance sheet is based on the purpose for which those assets were held and liabilities were undertaken. In other words, we can say assets and liabilities are shown in the balance sheet on the basis just opposite the basis of order of liquidity.

**While preparing balance sheet, items are to be shown in the following order:**

There are two formats in which balance sheet is usually prepared viz.,

- (i) Horizontal format and
- (ii) Vertical format. Either of these two can be used to arrange the assets and liabilities in the balance sheet:



**HORIZONTAL FORM OF BALANCE SHEET (In order of liquidity)**  
**BALANCE SHEET**

*as at.....*

Liabilities	₹	Assets	₹
Sundry Creditors	xxx	Cash in Hand	xxx
Bills Payable	xxx	Cash at Bank	xxx
Bank Loans	xxx	Bills Receivable	xxx
Outstanding Expenses	xxx	Sundry Debtors	xxx
Income Received in Advances	xxx	Advance Payments	xxx
Loan on Mortgages	xxx	Stock	xxx
Reserves & Surplus	xxx	Investments	xxx
Capital Account	xxx	Furniture & Fittings	xxx
		Plant & Machinery	xxx
		Land & Buildings	xxx
		Trade Mark	xxx
		Copy Rights	xxx
		Patents	xxx
		Goodwill	xxx
	xxx		xxx

**VERTICAL FORM OF BALANCE SHEET**

*as at .....*

Particulars	₹	₹	₹
<b>Fixed Assets :</b>			
Goodwill		xxx	
Patents		xxx	
Copy Rights		xxx	
Trade Marks		xxx	
Land & Buildings		xxx	
Plant & Machinery		xxx	
Furniture & Fittings		xxx	xxx
<b>Current Assets :</b>			
Stock	xxx		
Advance Payments	xxx		
Sundry Debtors	xxx		
Bills Receivable	xxx		
Cash at Bank	xxx		
Cash in Hand	xxx	xxx	
<b>Current Liabilities :</b>			
Sundry Creditors	xxx		
Bills Payable	xxx		
Outstanding Expenses	xxx		
Income Received in Advance	xxx	xxx	
Working Capital			xxx
<b>NET ASSETS EMPLOYED</b>		-	xxx
<b>Financed By :</b>			
Long-terms Loans		xxx	
Capital		xxx	
<b>Add : Net Profit</b>		xxx	xxx

<b>HORIZONTAL FORM OF BALANCE SHEET (In order of Permanence)</b>			
<b>BALANCE SHEET</b>			
as at .....			
<b>Liabilities</b>	<b>₹</b>	<b>Assets</b>	<b>₹</b>
Capital Account	xxx	Goodwill	xxx
Reserves & Surplus	xxx	Patents	xxx
Loan on Mortgages	xxx	Copy Rights	xxx
Bank Loans		Trade Marks	xxx
Income Recieved in Advance		Land & Buildings	xxx
Outstanding Expenses	xxx	Plant & Machinery	xxx
Bills Payable	xxx	Furniture & fittings	xxx
Sundry Creditors	xxx	Investments	xxx
		Stock	xxx
		Sundry Debtors	xxx
		Bills Receivable	xxx
		Cash at Bank	xxx
		Cash in Hand	xxx
	xxx		xxx

**Final Accounts (Without Adjustments)**

2. The following is the trial balance of Rishi trading as on 31<sup>st</sup> march, 2018.

<b>Particulars</b>	<b>L.F</b>	<b>Debit Rs.</b>	<b>Credit Rs.</b>
Machinery		1,02,000	
Land & Building		8,60,000	
Investments		70,000	
Bad debts		3,000	
Sundry debtors		40,000	
Purchases		3,09,800	
Stock on 1 <sup>st</sup> April 2017		23,000	
Interest		3,500	
Bills payable			6,750
Sundry creditors			80,000
Travelling expenses		700	
Trade expenses		5,000	
Discount		1,250	2,625
Purchase return			9,850
Sales return		6,775	
Bills receivable		2,275	
Capital			10,25,000
Sales			3,75,775

Particulars	L.F	Debit Rs.	Credit Rs.
obile phone bills(official)		6,000	
Postage		1,200	
Wages and salaries		12,000	
Salaries and wages		51,000	
Carriage		2,500	
		<b>15,00,000</b>	<b>15,00,000</b>

The closing stock is valued at Rs. 9000. You are required to prepare trading and Profit and loss account and the Balance sheet as at 31st March,2018.

**Solution:**

**Trading and Profit & Loss A/c of Rishi for the year ended 31st March 2018**

Dr							Cr
Date	Particulars	Amount (Rs.)	Amount (Rs.)	Date	Particulars	Amount (Rs.)	Amount (Rs.)
	To Opening Stock		23000		By Sales	375775	
	To Purchases	309800			Less:	6775	369000
					Sales Returns		
	Less: Purchase Returns	9850	299950		By Closing Stock		9000
	To Wages and Salaries		12000				
	To Carriage		2500				
	<b>To Gross Profit/d</b>		<b>40550</b>				
			<b>378000</b>				<b>378000</b>
	To Bad debts		3000		By Gross Profit b/d		40550
	To Interest		3500		By Discount Received		2625
	To Travelling Expenses		700		<b>By Net Loss c/d</b>		<b>28475</b>
	To Trade Expenses		5000				
	To Discount		1250				
	To Mobile phonebills (official)		6000				
	To Postage		1200				
	To Salaries		51000				
			<b>71650</b>				<b>71650</b>

Balance sheet of Rishi as on 31st March 2018						
	Liabilities	Amount (Rs.)	Amount (Rs.)	Asset	Amount (Rs.)	Amount (Rs.)
	<b>Shares And Capitals:</b>			<b>Fixed Assets:</b>		
	Capital	1025000		Machinery		102000
	Less: Net Loss	28475	996525	Land & Building		860000
	<b>Current Liabilities</b>			Investments		70000
	Bills Payable		6750	<b>Current Assets:</b>		
	Sundry creditors		80000	Sundry debtors		40000
				Bills receivable		2275
				closing stock		9000
			<b>1083275</b>			<b>1083275</b>

**Final Accounts (With Adjustments):**

3. Following is the Trial balance of Mohan Seth & Co. on 31st March, 2006. Prepare Trading and Profit and Loss Account for the year ending March 31st 2006 and the Balance Sheet as at that date, taking into account the adjustment given below.

Particulars	L.F	Debit(Rs.)	Credit(Rs.)
Computers		37,000	
Plant and Machinery		3,80,000	
Cash in hand		4,500	
Cash at bank		51,830	
Stock (as on 1 <sup>st</sup> April, 2003)		8,100	
Debtors		65,300	
Purchases/Sales		2,73,685	5,20,870
Carriage Outward		3,100	
Creditors			20,600
Rent		41,700	
General Expenses		24,000	
Loan (Loan taken on 1.4.2005 @ 10% p.a)			2,00,000
Returns inward		1,300	
Returns Outward			1,100
Repairs		1,400	
Wages		54,755	
Interest		10,000	

Particulars	L.F	Debit(Rs.)	Credit(Rs.)
Electricity charges		2,800	
Bills Payable			6,900
Capital			2,10,000
		<b>9,59,470</b>	<b>9,59,470</b>

**Adjustments:**

- The Closing stock was valued at Rs. 15,600
- Create a provision for doubtful debts @5%
- Depreciation is to be charged as follows:  
Plant and machinery – 10% p.a & computers @ 20% P.A
- General expenses include Rs.2000 Paid for wages.

**Solution:****Trading and Profit & Loss A/c of Mohan Seth & Co for the year ended 31st March 2006**

Dr					Cr		
Date	Particulars	Amount (Rs.)	Amount (Rs.)	Date	Particulars	Amount (Rs.)	Amount (Rs.)
	To Opening Stock		8100		By Sales	520870	
	To Purchases	273685			Less: Sales Returns	1300	519570
	Less: Purchase Returns	1100	272585		By Closing Stock		15600
	To Wages	54755					
	Add: Error	2000	56755				
	<b>To Gross Profit c/d</b>		<b>197730</b>				
			<b>535170</b>				<b>535170</b>
	To carriage outwards		3100		By Gross b/d Profit		197730
	To Rent		41700				
	To General Expenses	24000					
	Less: Error	2000	22000				
	To Electricity Charges		2800				
	To Repairs		1400				
	To Provision for doubtful debts		3265				
	To Depreciation for Plant & Machinery		38000				

Dr							Cr
Date	Particulars	Amount (Rs.)	Amount (Rs.)	Date	Particulars	Amount (Rs.)	Amount (Rs.)
	To Depreciation for Computers		7400				
	To Interest	10000					
	Add: outstanding	10000	20000				
	<b>To Net Profit c/d</b>		58065				
			197730				197730
<b>Balance sheet of Mohan Seth &amp; co as on 31st March 2006</b>							
	Liabilities	Amount (Rs.)	Amount (Rs.)		Asset	Amount (Rs.)	Amount (Rs.)
	<b>Shares And Capitals:</b>				<b>Fixed Assets:</b>		
	Capital	210000			Computers	37000	
	Add: Net Profit	58065	268065		Less: Depreciation	7400	29600
	<b>Current Liabilities:</b>				Plant & Machinery	380000	
	Creditors		20600		Less: Depreciation	38000	342000
	Bills Payable		6900				
	<b>Loans &amp; liabilities:</b>				<b>Current Assets:</b>		
	Loan	200000			Cash in hand		4500
	Add: Interest on loan (O/s)	10000	210000				
					Cash at bank		51830
					Debtors	65300	
					Less: Provision for doubtful debts	3265	62035
					Closing stock		15600
			<b>505565</b>				<b>505565</b>

4. The Trial Balance of Arvind & Sons on 31<sup>st</sup> March, 2006 is as follows:

Debit Balances	Rs.	Debit Balances (Cond.)	Rs.
Machinery	1,23,000	General Expenses	15,290
Building	3,80,000	Insurance and Taxes	31,200
Motor Vehicles	1,76,000	Printing Expenses	1,350

Debit Balances	Rs.	Debit Balances (Cond.)	Rs.
Sundry debtors	80,000	Cash in hand	3,000
Opening stock	8,400		<b><u>11,16,530</u></b>
Purchases	2,90,000	<b>Credit Balance</b>	
Sales Returns	800	Capital	5,90,000
Drawings	3,500	Creditors	11,870
Wages	2,800	Sales	4,78,760
Carriage Inward	890	Purchase Returns	2,200
Carriage Outward	300	Bank Overdraft	25,000
		Loan (Long – Term)	8,700
			<b><u>11,16,530</u></b>

The Following additional information is given below:

- The stock on 31.3.06 was valued at Rs.15,270
- Printing expenses due Rs.58,650.
- Audit fees due Rs.12,100
- Depreciation to be written off @ 10% p.a. on Machinery and Motor vehicles.
- Prepare Trading and Profit & Loss Account for the year ended 31st March, 2006 and Balance Sheet of Arvind & Sons as at 31st March, 2006.

**Solution:**

**Trading and Profit & Loss A/c of Arvind & Sons for the year ended 31st March 2006**

Dr				Cr			
Date	Particulars	Amount (Rs.)	Amount (Rs.)	Date	Particulars	Amount (Rs.)	Amount (Rs.)
	To Opening Stock		8400		By Sales	478760	
	To Purchases	290000			Less: Sales Returns	800	477960
	Less: Purchase Returns	2200	287800		By Closing Stock		15270
	To Wages		2800				
	To Carriage inward		890				
	<b>To Gross Profit/d</b>		<b>193340</b>				

Financial Accounting

Dr							Cr	
Date	Particulars	Amount (Rs.)	Amount (Rs.)	Date	Particulars	Amount (Rs.)	Amount (Rs.)	
			493230				493230	
	To carriage outwards		300		By Gross Profitb/d		193340	
	To General Expenses		15290					
	To Insurance and Taxes		31200					
	To Printing Expenses	1350						
	Add: Outstanding	58650	60000					
	To Outstanding Audit Fees		12100					
	To Depreciation for Machinery		12300					
	To Depreciation for Motor vehicles		17600					
	<b>To Net Profit c/d</b>		<b>44550</b>					
			<b>193340</b>				<b>193340</b>	



Balance sheet of Arvind & Sons as on 31st March 2006						
Liabilities	Amount(Rs.)		Amount (Rs.)	Asset	Amount (Rs.)	Amount (Rs.)
<b>Shares And Capitals:</b>				<b>Fixed Assets:</b>		
Capital	590000			Motor Vehicles	176000	
Add: Net Profit	44550			Less: Depreciation	17600	158400
	634550					
Less: drawing	3500		631050			
<b>Current Liabilities:</b>				Machinery	123000	
Creditors			11870	Less: Depreciation	12300	110700
Bank Overdraft			25000	Buildings		380000
Outstanding PrintingExp.			58650	<b>Current Assets:</b>		
Outstanding Auditfees			12100	Cash in hand		3000
<b>Loans &amp; liabilities:</b>				Debtors		80000
Loan			8700	Closing stock		15270
			<b>747370</b>			<b>747370</b>

5. Given below is the trail balance of Singh & co as on 31st March 2017.

Particulars	L.F	Debit(Rs.)	Credit(Rs.)
Opening stock		18,100	
Purchase less returns		3,10,000	
Sales less returns			8,90,000
Carriage inward		900	
Carriage outward		800	
Discount received			1,350
Discount allowed		830	
Factory heating and lighting		12,100	
Wages		21,000	

*Financial Accounting*

Particulars	L.F	Debit(Rs.)	Credit(Rs.)
Interest received			1000
Insurance		6,500	
Postage and telegram		100	
Rent		18,700	
Accidental trade expenses		1,400	
Computers		31,200	
Sales tax collected			31,500
Manufacturing expenses		62,920	
Cash in hand		6,500	
Plant and machinery		1,34,800	
Motor vehicles		3,10,000	
Income tax		12,000	
Customer's A/c / Supplier's A/c		11,000	13,500
Bank overdraft			9,500
Capital account			2,12,000
		<b>9,58,850</b>	<b>9,58,850</b>

Prepare Trading and Profit & Loss Account for the year ended 31st March, 2017 and balance sheet as at date, taking into consideration the following adjustments:

- The Closing stock was valued at Rs.12,000
- Half of the wages are in respect of work to be done in next year.
- Depreciate motor vehicles and Plant & Machinery @ 10% P. a
- Depreciate computers Rs.10600.
- Create provisions for discount on debtors @ 5% on debtors.

**Solution:**

**Trading and Profit & Loss A/c of Singh & Co for the year ended 31st March 2017**

Dr				Cr			
Date	Particulars	Amount (Rs.)	Amount (Rs.)	Date	Particulars	Amount (Rs.)	Amount (Rs.)
	To Opening Stock		18100		By Sales Less Returns		690000
	To Purchases less Returns		310000		By Closing Stock		12000

	To Carriage inwards		900				
	To Factory heating & lighting		12100				
	To Wages	21000					
	Less: Prepaid (21000*1/2)	10500	10500				
	To Manufacturing Expenses		62920				
	<b>To Gross Profit c/d</b>		<b>287480</b>				
			<b>702000</b>				<b>702000</b>
	To Carriage outward		800		By Gross Profit b/d		287480
	To Discount Allowed		830		By Discount Received		1350
	To Provision for Discount on Debtors (11000*5%)		550		By Interest Received		1000
	To Postage and Telegram		100				
	To insurance		6500				
	To Accidental Trade Expenses		1400				
	To Rent		18700				
	To Depreciation on Motor Vehicles		31000				
	To Depreciation on Plant & Machinery		13480				
	To Depreciation on Computers		10600				
	<b>To Net Profit C/d</b>		<b>205870</b>				
			<b>289830</b>				<b>289830</b>

Financial Accounting

<b>Balance sheet of Singh &amp; Co as on 31st March 2017</b>							
	<b>Liabilities</b>	<b>Amount (Rs.)</b>	<b>Amount (Rs.)</b>		<b>Asset</b>	<b>Amount (Rs.)</b>	<b>Amount (Rs.)</b>
	<b>Shares And Capitals:</b>				<b>Fixed Assets:</b>		
	Capital	212000			Computers	31200	
	Add: Net Profit	205870			Less: Depreciation	10600	20600
		417870			Motor Vehicles	310000	
	Less: Income Tax	12000	405870		Less: Depreciation	31000	279000
	<b>Current Liabilities:</b>				Plant & Machinery	134800	
	Suppliers A/c		13500		Less: Depreciation	13480	121320
	Bank overdraft		9500		<b>Current Assets:</b>		
	Sales Tax Collected		31500		Cash in hand		6500
	Bank overdraft		9500		Customers A/c	11000	
	Sales Tax Collected		31500		Less: Provision for doubtful debts	550	10450
					closing stock		12000
					<b>Mis. Exp:</b>		
					Prepaid Wages		10500
			<b>460370</b>				<b>460370</b>

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## Unit 3

### Part - A

#### 1. What is suspense account?

A suspense account is a general ledger account in which amounts are temporarily recorded. The suspense account is used because the appropriate general ledger account could not be determined at the time that the transaction was recorded.

#### 2. What do you mean by average due date?

In a business, it is quite normal to borrow several sums of money from the same lender. Sometimes, to ease the payments, we calculate an average due date so that all payments can be made on one date. The calculation ensures that neither party suffers in terms of interest. Let us take a look.

**Average due date = Base date  $\pm$  Total of the products / Total of the amounts**

#### 3. What is “error of principle”?

An error of principle is an accounting mistake in which an entry is recorded in the incorrect account, violating the fundamental principles of accounting. An error of principle is a procedural error, meaning that the value recorded was the correct value but placed incorrectly.

#### 4. Mention any two uses of ‘Average due date’.

Average due date is useful in the following types of accounting problems:

- Problems relating to settlement of accounts involving a series of bills of exchange due on different dates.
- Problems relating to calculation of interest of partners’ drawings made on different dates.
- Problems involving piece-meal realization of assets during the partnership dissolution.
- Problems involving settlement of accounts where money advanced is to be received in a number of installments due on different dates.

#### Rectification of one-sided errors before the preparation of trial balance

#### 5. Rectify the following errors which were detected before making the balance

(i) Purchase book has been overcast by Rs.650.

(ii) Sales Book has been under cast by Rs.200

(iii) Purchase returns book has been over cast by Rs.75.

(iv) Sales returns book has been under cast by Rs.50.

**Solution:**

(i) Credit purchases A/c with Rs.650

(ii) Credit sales A/c with Rs.200

(iii) Debit Purchase returns A/c with Rs. 75.

(iv) Debit Sales returns A/c with Rs.50.

**Part - B**

**1. Write the steps in calculating average due date. Ans:**

- Take any convenient date (preferably the first due date) as the Starting Point or Zero Date or Start Date or Focal Date or Base Date.
- Count the number of days of each transaction from the base date.
- Multiply the amount of each transaction with the number of days thus calculated.
- Add all the products so obtained.
- Add the amount of all transactions.
- Divide the total products by total amount (of all items)
- The result of (6) is the number of days by which average due date is away from the Base Date:

**Average Due Date:**

**2. The following amount is due from X to Y on different dates.**

Due date	Rs.
10 <sup>th</sup> January	500
26 <sup>th</sup> January (Republic Day)	1000
23 <sup>rd</sup> March	3000
18 <sup>th</sup> August (Sunday)	4000

Determine the Average due date. **Ans: 21<sup>st</sup> May**

**Solution:**

Due Date (Normal)	Due Date (Actual)	No. of days from 10 <sup>th</sup> January	Amount (Rs)	Product
10 <sup>th</sup> January	10 <sup>th</sup> January	0	500	0
26 <sup>th</sup> January	25 <sup>th</sup> January	15	1000	15000
23 <sup>rd</sup> March	23 <sup>rd</sup> March	72	3000	216000
18 <sup>th</sup> August	17 <sup>th</sup> August	219	4000	876000
			8500	1107000

Average Due Date = 10<sup>th</sup> January +  $1107000/8500$  = 10<sup>th</sup> January + 131 days = 21<sup>st</sup> May

**Working Notes:**

January	21
February	28
March	31
April	30
	110

**Rectification of compensation errors****3. Pass necessary journal entries to rectify the following errors:**

- An amount of Rs.1, 000 received from Aakash were recorded as Rs.100 and Rs.100 received from Garima were recorded as Rs.1,000.
- B. Rs. 600 paid to Pooja was recorded as Rs. 60 and Rs. 60 paid to Pankaj were recorded as Rs.600.
- Mohan's account was debited with Rs. 100 instead of Rs.1, 000 while Sohan's account was debited with Rs. 1,000 instead of Rs. 100.

**Solution: Journal**

Date	Particulars	L.F	Debit (Rs.)	Credit (Rs.)
(a)	Garima's A/c Dr To Aakash's A/c (Being an amount of Rs.1000 received from Aakash wrongly recorded as Rs.100 and Rs.100 received from Garima wrongly recorded as Rs.1000, now rectified)		900	900

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Date	Particulars	L.F	Debit (Rs.)	Credit (Rs.)
(b)	Pooja's A/c Dr To Pankaj's A/c (Being Rs.600 paid to Pooja wrongly recorded as Rs.60 and Rs.60 paid to Pankaj wrongly recorded as Rs.600, now rectified)		540	540
(c)	Mohan's A/c Dr To Sohan's A/c (Being Mohan account was debited with Rs.100 instead of Rs.1000 and Sohan account was debited with Rs.1000 instead of Rs.100, now rectified)		900	900

**Working Notes:**

Wrong Entry				Correct Entry				
(a)	Cash A/c	Dr	100		Cash	A/c	1000	1000
				100	Dr	To Aakash's A/c		
	Cash A/c	Dr	1000		Cash	/c	100	100
				1000	Dr	To Garima's A/c		
(b)	Pooja's A/c	Dr	60		Pooja's A/c	Dr	600	600
				60		To Cash A/c		
	Pankaj's A/c	Dr	600		Pankaj's A/c	Dr	60	60
				600		To Cash A/c		
(c)	Mohan's A/c	Dr	100		Mohan's A/c	Dr	1000	
				100		To Cash		1000
	Sohan's A/c	Dr	1000		Sohan's A/c	Dr	100	
				1000		To Cash		100



**Error of posting:****4. Payment side of Cash Book overcast by Rs.500. Pass necessary journal entries to rectify the following errors:**

- Rs. 200 paid for Rent wrongly debited to Miscellaneous expenses A/c.
- Salary of Rs. 500 paid to clerk, has been debited to his personal account.
- Rs. 100 paid as cartage for the newly purchased furniture, posted to cartage A/c.
- A Sale of old machinery for Rs. 1,200 has been credited to Sales A/c.
- Machinery purchased for Rs. 20,000 was passed through the invoice Book.

**Solution:****1. JOURNAL**

Date	Particulars	L.F	Debit (Rs.)	Credit (Rs.)
(a)	Rent A/c <span style="float:right">Dr</span> To Miscellaneous Expenses A/c (Being correction of wrong debit to Miscellaneous Expenses A/c for rent paid)		200	200
(b)	Salary A/c <span style="float:right">Dr</span> To Clerk's (personal) A/c (Being correction of wrong debit to clerk's personal A/c for salary paid)		560	560
(c)	Furniture A/c <span style="float:right">Dr</span> To Cartage A/c (Being correction of wrong debit to clerk's personal A/c for salary paid)		100	100
(d)	Sales A/c <span style="float:right">Dr</span> To Machinery A/c (Being correction of wrong credit to Sales A/c for sale of old machinery)		1200	1200
(e)	Machinery A/c <span style="float:right">Dr</span> To Purchases A/c (Being Correction of wrong debit to purchases A/c for the purchase of machinery)		20000	20000

**Working Notes:**

Wrong Entry				Correct Entry			
(a)	Miscellaneous Exp. A/c Dr To Cash A/c	200	200	Rent A/c <span style="float:right">Dr</span> To Cash A/c	200	200	

Wrong Entry				Correct Entry			
(b)	Clerk's(personal) Dr To Cash A/c	A/c	560	560	Salary A/c Dr To Cash A/c	560	560
(c)	Cartage Dr To Cash A/c	A/c	100	100	Furniture A/cDr To Cash A/c	100	100
(d)	Cash Dr To Sales A/c	A/c	1200	1200	Cash Dr To Machinery A/c	1200	1200
(e)	PurchasesDr To Cash A/c	A/c	2000 0	20000	Machinery A/cDr To Cash A/c	2000 0	2000 0

### Rectification of Error of omission

#### 5. Rectify the following errors:

- Goods worth Rs. 20,000 returned by Arvind were taken into stock, but no entry was passed in the books.
- A credit purchase of goods worth Rs.8,200 from Rajan was not passed in day books although the goods were taken in to stock.
- Goods costing Rs. 500 (sale price Rs.600) distributed as free sample were not recorded at all.

#### Solution: 1. Journal

Date	Particulars	L.F	Debit (Rs.)	Credit (Rs.)
(a)	Sales Return A/c To Arvind's A/c (Being goods returned by Arvind notrecorded in the books, now recorded)		20000	20000
(b)	Purchases A/c To Ranjan's A/c (Being goods purchased from Ranjan not recorded in books, now recorded)		8200	8200
(c)	Advertisement A/c To Purchases A/c (Being free sample distributed were not recorded, now recorded)		500	500

## Part - C

### 1. Describe the different types of errors.

**Accounting Errors:** Accounting errors are those mistakes which occur in the book keeping or accounting, relating to a routine activity or relating to the principle of accounting. The Accounting errors happen in entering the transactions in journal or subsidiary books or at the time of posting of entries in to the ledger. The accounting errors may happen because of the omission, commission, principle or as a compensating of errors.

**Classification of Accounting errors:** Accounting errors are classified in to four types on the basis of nature of Errors. They are (1) Errors of Omission, (2) Errors of Commission, (3) Errors of Principles and (4) Compensating Errors.

**(1) Errors of Omission:** The Errors of Omission will occur when a transaction is not recorded in the books of accounts or omitted by mistake. The Errors of Omission may happen as partial or complete.

The partial errors may happen in relation to any subsidiary books. This is the result of when a transaction is entered in the subsidiary book but not posted to the ledger. For example, cash paid to the suppliers has been entered in the payment side of the cash book but it will not be entered in the debit side of the suppliers' account.

The complete omission may happen the transaction is completely omitted from the books of accounts. For example, an accountant fails to enter a specific invoice from the sales day book.

**(2) Errors of Commission:** When a transaction is entered in the books of accounts in wrongly, this may be entered as partially or incorrectly. This kind of errors are known as Errors of Commission. The Errors of Commission may happen because of ignorance or negligence of the accountant. This may be of different types; the main reasons are Errors relating to subsidiary books and Errors relating to ledger.

**(3) Errors of Principles:** This kind of errors are occurring when the entries are made against the principle of accounting. These Errors are made because of the following reasons:-

1. Errors happen due to the inability to make a distinction between the revenue and capital items.
2. Errors happen due to the inability to make a difference between the business expenses and personal expenses.
3. Errors happens because of the inability to make a distinction between the productive expense and non-productive expenses.

**(4) Compensating Errors:** Compensating Errors are those errors which compensates themselves in the net results of the business. This means, if there are over debit in one account which will be compensated by the over credit in some account in the same extent of the business. Like that, if there is a wrong debit in one account which will be neutralized by some wrong credit in the same extent of the business. The accounting errors will hardly affect the accuracy of trial balance of the business because the trial balance is the final proof of the books of accounts. There are some of the methods to rectify the accounting errors happened in the books of accounts. The important two methods for rectifying the accounting errors are as follow.

- Striking of the wrong Entry.
- Making appropriate entries to correct the errors.

**Rectification of one-sided errors, after the preparation of trial balance**

2. Pass necessary Journal Entries to rectify the following errors that the errors were located after the closure of books:

- a. The total of Purchases Book has been overcast by Rs.250.
- b. The total of Purchases Book has been undercast by Rs.500.
- c. The total of Sale book was undercast by RS.300
- d. The total of Sales Book has been overcast by Rs.2000.
- e. Purchases Return Book undercast by Rs.600.
- f. Purchases Return Book overcast by Rs.1,500.
- g. Sales Return Book undercast by Rs.900.
- h. Sales Return Book overcast by Rs.1,000.
- i. Bills Receivable Book undercast by Rs.500.
- j. Bills Receivable Book overcast by Rs.600.
- k. Bills Payable Book undercast by Rs.3,500.
- l. Bills Payable Book overcast by Rs.4,000.

**Solution:**

Date	Particulars	L.F.	Debit (Rs.)	Credit (Rs.)
(i)	Suspense A/c Dr To Purchase A/c (Being purchases book was overcast by Rs.250, now rectified)		250	250
(ii)	Purchase A/c Dr To Suspense A/c (Being purchases book was undercast by Rs.500, now rectified)		500	500
(iii)	Suspense A/c Dr To Sales A/c (Being Sale book was undercast by RS.300, now rectified)		300	300

Date	Particulars	L.F.	Debit (Rs.)	Credit(Rs.)
(iv)	Sales A/c Dr To Suspense A/c (Being Sales book was overcast byRs.2000, now rectified)		2000	2000
(v)	Suspense A/c Dr To Purchase Return A/c (Being purchases return book undercast by Rs.600, now rectified)		600	600
(vi)	Purchase Return A/c Dr To Suspense A/c (Being purchase return book overcast by Rs.1500, now rectified)		1500	1500
(vii)	Sales returns A/c Dr To Suspense A/c (Being Sales Return book undercast byRs.900, now rectified)		900	900
(viii)	Suspense A/c Dr To Sales Return A/c (Being Sales Return book overcast byRs.1000, now rectified)		1000	1000
(ix)	Bills Receivable A/c Dr To Suspense A/c (Being bills receivable book undercast by Rs.500, now rectified)		500	500
(x)	Suspense A/c Dr To Bills Receivable A/c (Being bills receivable book overcast byRs.600, now rectified)		600	600
(xi)	Suspense A/c Dr To Bills payable A/c (Being bills payable book undercast byRs.3500, now rectified)		3500	3500
(xii)	Bills payable A/c Dr To Suspense A/c (Being bills payable book overcast byRs.4000, now rectified)		4000	4000

### Rectification of errors of principle

#### 3. Rectify the following errors:

- Repairs made on building for Rs. 50,000 were debited to buiding A/c.
- RentpaidRs.12,000tolandlordwasdebitedtolandlordA/c.
- Wages paid for installation of Machinery of Rs. 7,000 was debited in wages A/c

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- d. Salary paid to Accountant (Mr. Ram) of Rs. 15,000 was debited to Ram A/c.
- e. Rs. 32,000 paid for purchase of computer was charged to office expenses A/c.
- f. Amount of Rs. 7,500 withdrawn by proprietor for personal use was debited to Miscellaneous expenses A/c.
- g. Rs. 50,000 spent on erection of building were debited to Repairs A/c.
- h. Sale of old machinery for Rs. 25,000 was passed through daybook.

**Solution:**

Date	Particulars	L.F.	Debit (Rs.)	Credit (Rs.)
(a)	Repairs A/cDr To Building A/c (Being correction of wrong debit to building account for repairs)		50000	50000
(b)	Rent A/cDr To Landlord A/c (Being Correction of wrong debit of rent to Landlord account)		12000	12000
(c)	Machinery A/cDr To Wages A/c (Being correction of wrong debit to wages account for installation of machinery)		7000	7000
(d)	Salary A/cDr To Ram's A/c (Being salary paid to Ram wrongly debited to Ram's account, now rectified)		15000	15000
(e)	Computer A/cDr To Office expenses A/c (Being purchase of computer wrongly debited to office expenses account, now rectified)		32000	32000
(f)	Drawing A/cDr To Miscellaneous Expenses A/c (Being amount withdrawn for personal use wrongly debited to Miscellaneous expenses, now rectified)		7500	7500
(g)	Building A/cDr To Repairs A/c		50000	50000

Date	Particulars	L.F.	Debit (Rs.)	Credit (Rs.)
	(Being erection of building wrongly debited to repair A/c, now rectified)			
(h)	Sales A/cDr To Machinery A/c (Being sale of old machinery wrongly passed through day book, now rectified)		25000	25000

Working Notes:

Wrong entry				Correct Entry		
(a)	Building A/cDr To Cash A/c	50000	50000	Repair A/cDr To Cash A/c	50000	50000
(b)	Landlord A/cDr To Cash A/c	12000	12000	Rent A/cDr To Cash A/c	12000	12000
(c)	Wages A/cDr To Cash A/c	7000	7000	Machinery A/cDr To Cash A/c	7000	7000
(d)	Ram's A/cDr To Cash A/c	15000	15000	Salary A/cDr To Cash A/c	15000	15000
(e)	Office Expenses A/cDr To Cash A/c	32000	32000	Computer A/cDr To Cash A/c	32000	32000
(f)	Misc. Expenses A/c Dr To Cash A/c	7500	7500	Drawings A/cDr To Cash A/c	7500	7500
(g)	Repairs A/c Dr To Cash A/c	50000	50000	Building A/cDr To Cash A/c	50000	50000
(h)	Debtor A/c Dr To Sales A/c	25000	25000	Debtor A/cDr To Machinery A/c	25000	25000

### Rectification of errors of recording

#### 4. Pass the necessary journal entries to rectify the following errors.

- A credit purchase of Rs.560 from Arun was recorded as Rs.650.
- A credit purchase of Rs.560 from Rakesh was recorded as purchase from Rajesh.
- A credit purchase of Rs. 560 from Priya was recorded in the sales Book.
- A Bills Receivable of Rs. 500 received from Tejpal was entered in Bills Payable book.
- A credit sale of old furniture to Sheetal for Rs. 560 was entered in the Sales Book for Rs.650.
- A Cash purchase of Rs.560 from Mukesh was recorded as Rs.650.

**5. Ms. Princy had accepted the under-mentioned Bills payable to Suresh:**

Date of Acceptance	Term	Amount Rs.
15 <sup>th</sup> Sept. 2004	2 months	200
10 <sup>th</sup> Oct. 2004	2 months	400
30 <sup>th</sup> Nov. 2004	3 months	500
10 <sup>th</sup> Dec. 2004	3 months	600
30 <sup>th</sup> Jan. 2005	2 months	300

Princy desires to pay the aggregate amount of all these Bills on such a date as would involve no profit or loss to either of the party and Suresh agrees. Find out the date of this proposed payment.

**Solution:**

1. Three days of grace are added in all the bills whether they are in months or days.
2. If the amount of a Bill is payable in installments then in the period of each installment, days of grace are added.

	Nov	Dec	Jan	Feb	Mar	April	Total
18 <sup>th</sup> Nov. to 18 <sup>th</sup> Nov 2004	0	-	-	-	-	-	0
18 <sup>th</sup> Nov. to 13 <sup>th</sup> Dec 2004	12	13	-	-	-	-	25
18 <sup>th</sup> Nov. to 3 <sup>rd</sup> Mar 2005	12	31	31	28	3	-	105
18 <sup>th</sup> Nov. to 13 <sup>th</sup> Mar 2005	12	31	31	28	13	-	115
18 <sup>th</sup> Nov. to 2 <sup>nd</sup> April 2005	12	31	31	28	31	2	135

Calculation of Average Due Date (Base Date: 15 <sup>th</sup> Nov. 2004)			
Due Date	Amount Rs.	No of Days from 18 <sup>th</sup> Nov 2004	Products (2*3)
18 <sup>th</sup> Nov. 2004	200	0	0
13 <sup>th</sup> Dec. 2004	400	25	10,000
3 <sup>rd</sup> March 2005	500	105	52,500
13 <sup>th</sup> March 2005	600	115	69,000
2 <sup>nd</sup> April 2005	300	135	40,500
	2,000		1,72,000

$$\text{Average Due Date} = \text{Base Date} \pm \frac{\text{Total of Products}}{\text{Total of Amounts}}$$

$$= 18^{\text{th}} \text{ Nov. 2004} + \frac{1,72,000}{2,000}$$

$$= 18^{\text{th}} \text{ Nov. 2004} + 86 \text{ days}$$

$$= 12^{\text{th}} \text{ February 2005}$$



## Unit 4

### Part - A

#### 1. What is bank reconciliation statement?

Bank reconciliation statements ensure payments have been processed and cash collections have been deposited into the bank. The reconciliation statement helps identify differences between the bank balance and book balance, in order to process necessary adjustments or corrections. An accountant typically processes reconciliation statements once a month.

#### 2. Define depreciation.

According to Spicer and Pegler” Depreciation is the measure of the exhaustion of the effective life of an asset from any cause during a given period”.

#### 3. What is revaluation method?

Revaluation method of depreciation is one of the easiest ways of calculating depreciation on fixed assets. The value of the asset on which depreciation charge is to be calculated is assessed both at the start and at the end of the year and any revaluation losses arising during the year are considered as the depreciation charge. The valuation is usually performed by either an internal competent member or an external professional value.

Revaluation method of depreciation is mostly used for the calculation of depreciation of trivial, inexpensive and small fixed assets that are normally accounted as a collective unit. This method makes the calculations easier, because it becomes complicated to assess depreciation of each of such assets separately.

#### 4. Explain the meaning of obsolescence.

Continuous improvement, innovation, market trends, etc. in the market lead to the production of new and improved assets. It causes a reduction in the monetary value of assets which are currently being used. This whole process of an asset becoming out of date and losing its economic value is called Obsolescence.

The concept of obsolescence is useful while applying depreciation or evaluating stock (inventory). A fixed asset may become obsolete even before the end of its predicted useful life. While evaluating inventory all obsolete (outdated) items are supposed to be charged to the Income statement.

#### 5. What is an 'adjusted cash book'?

The Cash Book Adjustment program is used to enter Cash Book adjustments into the system. Cash Book Adjustments are used to correct input errors or add miscellaneous bank debits or credits.

**Part - B**

**1. What is a Bank Reconciliation Statement? Give format of BRS based on cash book balances.**

**Ans:** Bank Reconciliation statement is a list in which are indicated the various items that cause a difference between the bank balances as per cash book and pass book on any given date. This statement bridges the gap between the balance shown by the cash book and the pass book.

	Particulars	Amount (Rs)
<b>A</b>	<b>Bank balance as per pass book</b>	.....
	Add: Items having the effect of higher balance in cash book	
	(1) Cheque deposited but not yet cleared by bank	.....
	(2) Bank charges debited by the bank but not yet recorded in cash book	.....
	(3) Direct payment by the bank to a vendor but not yet recorded in cash book	.....
	(4) Cheque deposited returned dishonoured	
	(5) Amount wrongly debited by the bank in pass book	.....
	Less: Items having the effect of lower balance in cash book	.....
	(1) Cheque issued but not yet presented for payment	.....
	(2) Interest allowed by bank but not yet recorded in cash book	.....
	(3) Direct payment by a customer into bank but not yet recorded in cash book	.....
	(4) cheque issued returned on technical grounds	.....
	(5) Amount wrongly credited by the bank in pass book	.....
<b>B</b>	<b>Bank balance as per cash book</b>	.....

**RATE OF DEPRECIATION:**

2. A company purchased machinery for Rs.100000. The useful life of the Machinery is 10 years and the residual value is Rs.200000. Find out the rate of depreciation under the Straight line method.

**Solution:**

$$\begin{aligned} \text{Rate of Depreciation} &= \frac{\text{Amount of Depreciation}}{\text{Original cost of the machinery}} \times 100 \\ \text{Amount of Depreciation} &= \frac{\text{Original cost} - \text{Estimated scrab value}}{\text{No. of years of expected life}} \\ &= \frac{1,00,000 - 20,000}{10 \text{ years}} \\ &= \frac{80,000}{10} \\ &= \text{Rs. } 8,000 \\ \text{Rate of Depreciation} &= \frac{8,000}{1,00,000} \times 100 \\ &= 8\% \end{aligned}$$

**Purchase of Single machinery (SLM):**

3. A machine was purchased on 1st July 1999 at a cost of Rs.14000 and Rs 1000 was spent on its installation. The depreciation is written off at 10% on original value every year. The books are closed on 31st December each year. The machinery was sold for Rs.9500 on 31st march 2002. Show the Asset Account for all the years.

**Machinery A/c**

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1999 July 1	To Bank A/c [14,000+1,000]	15,000	1999 Dec 31	By Depreciation [15,000 x 10% x 6/12]	750
		15,000		By Balance c/d	14,250
					15,000
2000 Jan 1	To Balance b/d	14,250	2000 Dec 31	By Depreciation (15,000x10%)	1,500
		14,250		By Balance c/d	12,750
					14,250
2001 Jan 1	To Balance b/d	12,750	2001 Jan 1	By Depreciation	1,500
		12,750		By Balance c/d	11,250
					12,750

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
2002 Jan 1	To Balance b/d	11,250	2002 Mar 31	By Bank (sale)	9,500
				By Depreciation	375
				(15000x10%x3/12 months)	<b>1,375</b>
				By P&L A/c (Loss on sale)	
		11,250			11,250

**Working Notes:**

	Rs.
Cost of Machine	15,000
Less: Depreciation 1 <sup>st</sup> year (15,000 x 10% x 6/12)	750
	14,250
Less: Depreciation 2 <sup>nd</sup> Year (15,000 x 10%)	1,500
	12,750
Less: Depreciation 3 <sup>rd</sup> year (15,000 x 10%)	1,500
	11,250
Less: Depreciation 4 <sup>th</sup> year (15,000 x 10% x 3/12)	375
<b>Book Value</b>	<b>10,875</b>
Less: Sale (31.3.02)	9,500
<b>Loss on sale of Machinery</b>	<b>1,375</b>

**Purchase of single machinery (WDV):**

4. Machinery purchased for Rs.28000 on 1.1.1998 installation expenses incurred Rs.2000. Accounts were closed on 31st march and depreciation charged at 10% on written down value. On 31.3.2001 it was sold for Rs.18000. Prepare the machinery.

**Solution:**

**Machinery Account**

Date	Particulars	Rs.	Date	Particulars	RS.
1.10.98	To Bank (28,000 + 2,000)	30,000	31.3.99	By Depreciation (30000x10%x6/12)	1,500
				By Balance c/d	28,500
		30,000			30,000
1.4.99	To Balance b/d	28,500	31.3.00	By Depreciation (28,500x10%)	2850

Date	Particulars	Rs.	Date	Particulars	RS.
				By Balance c/d	25650
		28,500			28,500
1.4.00	To Balance b/d	25,650	31.3.01	By Bank (sale)	18,000
			31.3.01	By Depreciation (25,650x10%)	2,565
			31.3.01	<b>By P &amp; L A/c (Loss)</b>	<b>5,085</b>
		25,650			25,650

**Working Notes:**

	Rs.
Cost of Machine (28,000+2,000)	30,000
Less: 1 <sup>st</sup> Year Depreciation (30,000 x10%x 6/12)	1,500
	28,500
Less: 2 <sup>nd</sup> Year Depreciation (28,500x10%)	2,850
	25,650
Less: 3 <sup>rd</sup> Year Depreciation (25650 x 10%)	2,565
<b>Book Value</b>	<b>23,085</b>
Less: sale	18,000
<b>Loss on sale of Machinery</b>	<b>5,085</b>

**Favourable balance as per cash book**

5. Prepare a Bank Reconciliation statement as on 31.12.2017, from the following details:

Particulars	Rs.
Balance as per cashbook	8000
Cheque deposited into bank but not collected.	600
Cheque issued but not presented for payment	850
Bank charges debited in pass book	30
Interest credited in passbook	200

**Solution:**

Bank Reconciliation Statement as on 31.12.17

Particulars	Amount Rs.	Amount Rs.
<b>Balance as per cash book</b>		8,000
Add:		
Cheque issued but not presented for payment	850	
Interest credited in pass book	200	1,050
		9,050
Less:		
Cheque deposited into bank but not collected	600	
Bank charges debited in pass book	30	630
<b>Balance as per pass book</b>		<b>8,420</b>

**Part - C**

**1. Briefly explain various methods of providing for depreciation.**

**Methods of Providing Depreciation:**

**a. Straight Line Method:** Under this method an equal periodic charge for depreciation is made over the estimated economic life of the machine. In this method, a percentage of the original cost of the asset concerned less the residual value, if any, is written off every year till the end of its estimated life.

**ii. Diminishing Balance Method:** Under this method a fixed percentage is written off every year on a diminished book value of the asset till the asset is reduced to its scrap value. This method is also called 'written down value method' and 'reducing balance method'.

**iii. Production Unit Method:** Under this method, an estimate is made of expected number of units that can be produced over the economic life of the machine. The depreciation per unit is arrived at by dividing the cost of asset with number of units it is expected to produce during its useful life.

**iv. Machine Hour Rate Method:** Under this method depreciation charge is calculated by dividing net cost of asset with the estimated production hours over its economic life.

**v. Revaluation Method:** Under this method the asset is revalued at the end of each accounting period and depreciation is the difference between the value of the asset at the beginning and the end of the accounting period. This method is used in loose tools, furniture of service industry etc.

**vi. Replacement Cost Method:** The current replacement price is based on the price for which assets might be sold. This valuation assumes continuation of the ordinary course of business and is not based on forced or distressed sale prices. Under this method the depreciation is taken as the difference between the current replacement cost at the beginning and the end of the accounting period.

**vii. Repair Provision Method:** Under this method, an aggregate of depreciation and maintenance cost is provided by means of periodic charges, each of which is a constant proportion of the aggregate of the cost of the asset depreciated and the expected maintenance cost during its life.

**viii. Sinking Fund Method:** Under this method, an amount equal to the depreciation is invested outside in securities for replacement of the machinery.

**ix. Endowment Policy Method:** Under this method, endowment insurance policy is taken on the life of the asset, so that at the end of a definite period, the insurance company will pay the assured sum with the help of which the asset can be repurchased.

**x. Modified Accelerated Cost Recovery Method:** Under this system each kind of equipment is classified by its useful life and there is no consideration of salvage value under this method. The percentage of the value as stipulated by the Government is to be taken as depreciation each year. For detailed study on methods of depreciation, the students are suggested to refer to books on 'Financial Accounting' subject.

### Purchase of Double machinery (SLM)

2. Karthick Ltd. purchased a machine on 1st January 1995 for Rs.50, 000. On 1st July 1995 further machinery was purchased for Rs. 25,000. On 1st July 1996, the machinery purchased on 1st January 1995 become obsolete, was sold off for Rs. 20,000. Depreciation has to be charged at 20% on the original cost assuming that the accounts are closed on 31st December every year. You are required to prepare Machinery account.

#### Solution:

#### Machinery A/c

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1.1.95	To Bank A/c (Machine I)	50,000	31-12-95	By Balance c/d	75,000
1-7-95	To Bank A/c (Machine II)	25,000			75,000
		75,000			
1-1-96	To Balance b/d	75,000	1-7-96	By Bank (sale of Machine I)	20,000
				By P&L A/c (Loss on sale of Machine I)	<b>15,000</b>
				By Provision for depreciation	15,000
			31-12-96	By Balance c/d	25,000
		75,000			75,000

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1-1-97	To Balance b/d	25,000			

**Provision for depreciation a/c**

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
31-12-95	To Balance c/d	12,500	31-12-95	By Depreciation A/c (50,000 x 20%) (25,000 x 20% x 6/12)	12,500
		12,500			12,500
1-7-96	To Machinery A/c	15,000	1-1-96	By Balance b/d	12,500
31-12-96	To Balance c/d	7,500	1-7-96	By Depreciation (50,000 x 20% x 6/12)	5,000
		22,500	31-12-96	By Depreciation (25,000 x 20%)	5,000
			1-1-97	By Balance b/d	7,500

<b>Working Note:</b> Calculation of Loss on Sale of Machinery Cost of Machinery on 1-1-95	50,000
Less: Depreciation for years (i.e., from 1-1-95 to 1-7-96)	15,000
Book Value on 1-7-96	35,000
Less: Sale proceeds	20,000
<b>Loss on sale</b>	<b>15,000</b>

**Purchase of Double machinery (WDV):**

2. Vijay Ltd. purchased a machine for Rs.150000 on 1st July 2003. On 1st Jan 2004 another machine was purchased for Rs.50000. On 1st July 2003 become obsolete and was sold for Rs.100000. Provide Depreciation at 10% per annum on written down value each year. The accounts are closed on 31st December every year. Prepare Machinery Account under written down value method.



**Solution:****Machinery**

Date	Particulars	Rs.	Date	Particulars	Rs.
1.7.03	To Bank (machine-I)	1,50,000	31.12.03	By Depreciation (1,50,000x 10%x6/12)	7,500
				By Balance c/d	1,42,500
		1,50,000			1,50,000
1.1.04	To Balance b/d	1,42,500	31.12.04	By Depreciation (1,42,500x10%)	14,250
1.1.04	To Bank (Machine-II)	50,000		By Depreciation (50,000x10%)	5,000
				By Balance c/d	1,73,250
		1,92,500			1,92,500
1.1.05	To Balance b/d	1,73,250	31.12.05	By Bank (sale of Machine I)	1,00,000
				By Depreciation (Machine-I)(1,28,500x10%)	12,825
				By P&L A/c(Loss)	15,425
				By Depreciation(45000x10%) (Machine II)	4,500
				By Balance c/d	40,500
		1,73,500			1,73,500
1.1.06	To Balance b/d	40,500			

**Working Notes: Machine I**

	Rs.
Cost of Machine	1,50,000
Less: Depreciation (1,50,000x10%x6/12)	7,500
	1,42,500
Less: Depreciation 2 <sup>nd</sup> Year (1,42,500x10%)	14,250
	1,28,250
Less: Depreciation 3 <sup>rd</sup> Year (1,28,250x10%)	12,825
<b>Book Value</b>	<b>1,15,425</b>
Less: Sale of Machinery	1,00,000
<b>Loss on sale of Machinery</b>	<b>15,425</b>

**Over draft as per cash book**

**3. Prepare a Bank Reconciliation statement of Ras on 31st Dec 2011, from the following details:**

- (i) The bank overdraft as per cash book on 31st Dec 2011Rs.6340
- (ii) Interest on overdraft for 6 months ending 31st December, 2011 Rs. 160 is entered in passbook.
- (iii) Bank charges of Rs.30 are debited in passbook only.
- (iv) Cheques issued but not cashed prior to 31st December, 2011 were Rs.2170
- (v) Interest on investments collected by the bank and credited in the pass book Rs.1, 200.

**Solution:**

Particulars	Amount Rs.	Amount Rs.
<b>Overdraft as per cash book</b>		6,340
Add:		
Interest debited in the pass book but not yet entered in the cash book	160	
Bank charges debited in the pass book but not entered in the cash book	30	190
		6,530
Less:		
Cheque issued but not yet presented	2,170	
Interest on investments collected by the bank and credited in the pass book	1,200	3,370
<b>Overdraft as per pass book</b>		<b>3,160</b>

**Favorable balance as per pass book**

4. The bank passbook of M/s. Boss & Co. showed a balance of Rs. 45,000 on May 31, 2014. 1. Cheques issued before May 31, 2014, amounting to Rs. 25,940 had not been presented for encashment. 2. Two cheques of Rs. 3,900 and Rs. 2,350 were deposited into the bank on May 31 but the bank gave credit for the same in June, 2014. 3. There was also a debit in the passbook of Rs. 2,500 in respect of a cheque dishonoured on 31.5.2014. Prepare a bank reconciliation statement as on May 31, 2014.

**Solution:**

<b>Particulars</b>	<b>Amount Rs.</b>	<b>Amount Rs.</b>
<b>Balance as per pass book</b>		45,000
<b>Add:</b>		
Two cheque were deposited into the bank	3,900+2,350	
Over casting Dr. side of bank account in cash book (cheque dishonoured)	2,500	8,750
		53,750
<b>Less:</b>		
Cheques issued but not been presented for encashment		25,940
<b>Balance as per cash book</b>		<b>27,810</b>

## Unit 5

### Part - A

#### 1. Define single entry?

According to Kohler “A system of book keeping in which as a rule only records of cash and personal accounts are maintained. It is always incomplete double entry, varying with the circumstances”.

#### 2. What is net worth method?

Under this system, i.e., Net worth Method, a trader has to prepare two Statements of Affairs, one at the beginning and the other at the end. From these Statements, the amount of Capital at the beginning as well as at the end is ascertained. Then the comparison of the Capitals reveals the profit or loss made during the period. This system is also known as Capital Comparison Method.

#### 3. State any 5 Limitations of single entry system.

- Insufficient Records
- Absence of Trial balance
- Difficulty in ascertaining profit & Financial position
- Lack of statistical data
- Planning and decision making are difficult
- Value of business cannot be ascertained
- Encouragement to fraud
- Filing tax returns, preparing claims etc.,

#### 4. What is conversion method in single entry?

The process of collecting, computing and recording missing information along with the available data in the incomplete books of a business is called ‘conversion method’. Once the books are ‘converted’, all future transactions can be recorded as per ‘double entry system’.

#### 5. Write a short note on:      (a) Debtors      (b) Creditors

**(a) Debtors:** A person who receives a benefit without giving money or money’s worth immediately but, liable to pay in future is a debtor. Debtor can be a ‘trade debtor’ if he buys goods on credit. Others are non trade debtors.

**(b) Creditors:** A person who gives a benefit without receiving money or money’s worth immediately but, liable to claim in future is a creditor. Creditor can be a ‘trade creditor’ if he supplies goods on credit. Others are non trade creditors.

**Part - B****1. What is single entry? What are its salient features? Meaning:**

Single entry system is an incomplete form of recording financial transactions. It is the system, which does not record two aspects or accounts of all the financial transactions. It is the system, which has no fixed set of rules to record the financial transactions of the business. Single entry system records only one aspect of transaction.

**Features Of Single Entry System**

*The following are the main features of single entry system:*

1. **No Fixed Rules:** Single entry system is not guided by fixed set of accounting rules for determining the amount of profit and preparing the financial statements.
2. **Incomplete System:** Single entry system is an incomplete system of accounting, which does not record all the aspects of financial transactions of the business.
3. **Cash Book:** Single entry system maintains cash book for recording cash receipts and payments of the business organization during a given period of time.
4. **Personal Account:** Single entry system maintains personal accounts of all the debtors and creditors for determining the amount of credit sales and credit purchases during a given period of time.
5. **Variations In Application:** Single entry system has no fixed set of principles for recording financial transactions and preparing different financial statements. Hence, it has variations in its application from one business to another.

**CALCULATION OF PROFIT OR LOSS:**

2. Sri. Pinto Started a business on 01.01.2009 with a capital of Rs.61, 500/- and on 31.12.2009 his capital was Rs.96, 000/-. He withdrew from business every month Rs.1, 500/- for his personal use and gave his wife Rs.6, 000/-. He invested Rs.15, 000/- for further capital in this year. Calculate the amount of profit or loss made for the year 2009.

**Solution:**

**Statement of Profit or Loss for the year 2009**

Particulars	Rs.	Rs.
Capital as on 31.12.2009		96,000
Add: Drawings:		
Expenses for his wife	6,000	
Withdrawals Rs.1500 P.M	18,000	24,000
		1,20,000
Less: Additional capital introduced		15,000

Particulars	Rs.	Rs.
Adjusted closing capital		1,05,000
Less: Capital as on 1.1.2009		61,500
Profit made during 2009		43,500

**3. A merchant has commenced business with a capital of Rs.10,200 on 01.01.2009. on 01.05.2009, he invested an additional capital of Rs.4,250/- he withdrew Rs.1,700/- for his personal purpose. The asset and liabilities on 31.12.2009are:**

	Rs.
Creditors	4,250
Furniture	1,700
Stock	13,600
Debtors	3,400
Cash in hand	2,550

Prepare a statement showing profit or loss for the year 2009.

**Solution:**

**Statement of affairs as on 31.12.2009**

Liabilities	Rs.	Assets	Rs
Creditors	4,250	Furniture	1,700
Capital	17,000	Stock	13,600
(Bal. Fig)		Debtors	3,400
		Cash in hand	2,550
	21,250		21,250

**Statement of Profit or Loss for the Year Ended 31.12.2009**

Particulars	Rs.
Capital on 31.12.2009	17,000
(+)Drawings	1,700
(-)Additional Capital	
Adjusted closing capital(-)Opening capital	18,700 4,250
Profit made during 2009	14,450 10,200 4,250

**TOTAL SALES (OR) TOTAL DEBTORS ACCOUNT:****4. From the following information, calculate total sales.**

	<b>Rs.</b>
Debtors (Opening)	1,50,000
Bills Receivable (Opening )	20,000
Bills receivable encashed	2,00,000
Cash received from Debtors	2,00,000
Returns inwards (Sales Returns)	12,000
Bad debts	5,000
Bills receivable dishonored	10,000
Bill receivable (closing)	60,000
Debtors (closing)	2,50,000
Cash sales	3,50,000

**Solution:****Total Bills Receivable Account**

<b>Particulars</b>	<b>Rs.</b>	<b>Particulars</b>	<b>Rs.</b>
To Balance b/d	20,000	By Cash	2,00,000
To Debtors (B/R received)(B/F)	2,50,000	By Debtors (B/R dishonoured)	10,000
		By Balance c/d	60,000
	<b>2,70,000</b>		<b>2,70,000</b>

**Total Debtors Account**

<b>Particulars</b>	<b>Rs.</b>	<b>Particulars</b>	<b>Rs.</b>
To Balance b/d	1,50,000	By Cash	2,00,000
To B/R (dishonoured)	10,000	By Returns inwards	12,000
To Credit Sales (B/F)	5,57,000	By Bad debts	5,000
		By B/R	2,50,000
		By Balance c/d	2,50,000
	7,17,000		7,17,000

Total Sales = Cash sales + Credit Sales

$$= 3,50,000 + 5,57,000 = \text{Rs. } 9,07,000$$

**TOTAL PURCHASE (OR) TOTAL CREDITORS ACCOUNT:**

**5. From the following information find out the amount of Total purchases.**

	<b>Rs.</b>
Creditors (Opening)	50,000
Creditors (Closing)	80,000
Cash pay to creditors	95,000
Purchase returns	5,000
Cash Purchase	1,00,000

**Solution:**

**Total Creditors Account**

<b>Particulars</b>	<b>Rs.</b>	<b>Particulars</b>	<b>Rs.</b>
To Cash	95,000	By Balance b/d	50,000
To Purchase returns	5,000	By Credit purchase (B/f)	1,30,000
To Balance c/d	80,000		
	1,80,000		1,80,000

$$\begin{aligned}
 \text{Total Purchases} &= \text{Cash purchases} + \text{Credit purchases} \\
 &= 1,00,000 + 1,30,000 \\
 &= \text{Rs. 2,30,000}
 \end{aligned}$$

**Part - C**

**1. Distinguish between single entry and double entry systems.**

<b>BASIS FOR COMPARISON</b>	<b>SINGLE ENTRY SYSTEM</b>	<b>DOUBLE ENTRY SYSTEM</b>
Meaning	The system of accounting in which only one sided entry is required to record financial transactions is Single Entry System.	The accounting system, in which every transaction affects two accounts simultaneously is known as the Double Entry System.
Nature	Simple	Complex
Type of recording	Incomplete	Complete
Errors	Hard to identify	Easy to locate



<b>BASIS FOR COMPARISON</b>	<b>SINGLE ENTRY SYSTEM</b>	<b>DOUBLE ENTRY SYSTEM</b>
Ledger	Personal and Cash Account	Personal, Real and Nominal Account
Preferable for	Small Enterprises	Big Enterprises
Preparation of Financial Statement	Difficult	Easy
Suitable for tax purposes	No	Yes
Financial position	Cannot be ascertained easily.	Can be ascertained

**2. A retail trader keeps his books under single entry. The assets and liabilities as on date were:**

	<b>31.12.2008</b>	<b>31.12.2009</b>
	<b>Rs.</b>	<b>Rs.</b>
Furniture	5,000	8,000
Stock	15,000	20,000
Machinery	25,000	28,000
Debtors	24,000	40,000
Creditors	38,000	45,000
Cash	18,000	7,000
Drawings		6,000

Additional capital introduced during the year Rs.25,000/- prepare a statement of profit or loss for the traders for the year 2009.

**Solution:**

**Statement of Affairs as on 31.12.2008**

<b>Liabilities</b>	<b>Rs.</b>	<b>Assets</b>	<b>Rs.</b>
Creditors	38,000	Furniture	5,000
Capital	49,000	Stock	15,000
(Bal.fig)		Machinery	25,000
		Debtors	24,000
		Cash	18,000
	87,000		87,000

**Statement of Affairs as on 31.12.2009**

<b>Liabilities</b>	<b>Rs.</b>	<b>Assets</b>	<b>Rs.</b>
Creditors	45,000	Furniture	8,000
Capital (Bal.fig)	58,000	Stock	20,000
		Machinery	28,000
		Debtors	40,000
		Cash	7,000
	1,03,000		1,03,000

**Statement of Profit or Loss for the year 2009**

<b>Particulars</b>	<b>Rs.</b>
Closing capital	58,000
Add: Drawings (63,750-44,200)	6,000
	64,000
Less: Additional capital	25,000
Adjusting closing capital	39,000
Less: Opening capital	49,000
Loss during the year 2009	(-)10,000

**3. A Business which keeps its books on single entry, provides its position on 31.12.2008 and 31.12.2009 are as follows:**

	<b>31.12.2008</b>	<b>31.12.2009</b>
Sundry Debtors	34,000	44,200
Sundry Creditors	34,850	26,350
Cash in hand	3,400	4,080
Cash at Bank	51,000	21,250
Stocks	55,250	42,500
Furniture	2,550	2,975

- The proprietor withdraws Rs.63, 750 from the business out of which he spentRs.44,200/-for purchase of a truck for the business.
- Depreciation on furniture (closing balance) and truckat10%
- Bad debts are to be written off at Rs.1,8 7 0 .
- Provision for Bad debts is required@5%
- Find the profit or loss for the year 2009.

**Solution:****Statement of Affairs as on 31.12.2008**

<b>Liabilities</b>	<b>Rs.</b>	<b>Assets</b>	<b>Rs.</b>
Sundry creditors	34,850	Sundry Debtors	34,000
Capital (Bal.fig)	1,11,350	Cash Debtors	3,400
		Cash at Bank	51,000
		Stock	55,250
		Furniture	2,550
	1,46,200		1,46,200

**Statement of Affairs as on 31.12.2009**

<b>Liabilities</b>	<b>Rs.</b>	<b>Assets</b>	<b>Rs.</b>
Sundry Creditors	26,350.00	Sundry Debtors	44,200.00
		(-)Bad Debts	1,870
			42,330
Capital (Bal.fig.)	1,24,151.00	(-)Provision for Bad Debts @5%	2,116.50
			40,213.50
		Cash in hand	4080.00
		Cash at Bank	21,250.00
		Stock	42,500.00
		Furniture	2,975.00
		(-) Depreciation@ 10%	297.50
			2677.50
		Truck	44,200.00
		(-) Depreciation @ 10%	4,420.00
			39,780.00
	1,50,501.00		1,50,501.00

**Statement of Profit or Loss for the year 2009**

Particulars	Rs.
Closing capital	1,24,151
Add: Drawings (63,750-44,200)	19,550
Adjusting closing capital	1,43,701
Less: Opening capital	1,11,350
Profit made during 2009	32,351

**4. Mr. keeps his books under single entry system. His assets and liabilities are:**

	01.01.2009	31.12.2009
Cash	5,000	2,000
Sundry debtors	4,000	10,000
Bank Loan	-	2,000
Office furniture	12,000	12,000
Sundry Creditors	2,500	2,200
Outstanding Expenses	-	500

Mr. X has withdrawn Rs.500 p.m. for his personal use. He introduced Rs.1, 500 as additional capital during the year. Provision for Bad debts @5% on sundry debtors is to be provided. Depreciation on office furniture to be provided @10%. Find the profit or loss for the year.

**Solution:**

**Statement of Affairs as on 1.1.2009**

Liabilities	Rs.	Assets	Rs.
Sundry creditors	2,500	Cash	5000
		Sundry Debtors	4,000
		Office furniture	12,000
Capital (Bal.fig)	18,500		
	21,000		21,000

**Statement of Affairs as on 31.12.2009**

Liabilities	Rs.	Assets	Rs.
Bank Loan	2,000	Cash	2000
Sundry creditors	2,200		

Liabilities	Rs.	Assets	Rs.
Outstanding expenses	500	Sundry Debtors	9,500
Capital	17,600	10,000	
(Bal.fig)		(-)Prov. for Baddebts500	10,000
	22,300	-----	22,300
		---	
		Office furniture	
		12,000	
		(-)Depreciation	
		1,200	

#### Statement of Profit or Loss for the year 2009

Particulars	Rs.
Capital as on 31.12.2009	17,600
(+) Drawings	6,000
	23,600
(-) Additional capital Adjusted closing capital	1,500
	22,100
(-)Capital as on 1.1.2009	18,500
	3,600
Profit made during the year	

**5. Raja & Rani are equal partners in a business in which the books are kept by singleentry system. Their position on 01.04.2009 was as under:**

Liabilities	Rs.	Rs.	Assets	Rs.
Bills payable		6,200/-	Cash in hand	270
Creditors		20,000/-	Cash at Bank	13,880
Capital A/c			Bills receivable	4,600
Raja	80,000		Sundry Debtors	48,650
Rani	80,000	1,60,000	Stock	33,800
			Plant & Machinery	80,000
			Furniture	5,000
		<b>1,86,200</b>		<b>1,86,200</b>

On 31.03.2010 the following was the state of affairs.

	Rs.		Rs.
Cash in hand	400	Cash at bank	15,800
Sundry Creditors	21,200	Sundry Debtors	66,300
Bills receivable	8,800	Bills payable	600
Stock	36,700		48,650

Plant & Machinery and furniture are to be depreciated @ 10% Drawings: Raja Rs.10,000 & Rani Rs.8,000/-. Ascertain the profit or loss for the year ended 31.03.2010 and statement of affairs as on that date. Prepare capital account of partners.

**Solution:**

**Statement of Affairs as on 31.3.2010**

Liabilities	Rs.	Assets	Rs.
Sundry creditors	21,200	Cash in hand	400
Bills payable	600	Cash at bank	15,800
Capital(B/F)		Stock	36,700
Raja           91,350		Sundry debtors	66,300
Rani           91,350	1,82,700	Bills Rceivable	8,800
		Plant & Machinery	80,000
		(-) Dep @ 10%	8,000
		Furniture	5,000
		(-) Dep @10%	500
	2,04,500		2,04,500

**Statement of Profit or Loss for the year ended 31.3.2010**

Particulars	Rs.	Rs.
Capital on 31.3.2010		
Raja	91,350	
Rani	91,350	1,82,700
Add: Drawings		
Raja	10,000	
Rani	8,000	18,000
Adjusted closing capital		2,00,700
(-) Capital on 1.4.2009		

Particulars	Rs.	Rs.
Raja	80,000	
Rani	80,000	1,60,000
Profit		40,700

Particulars	Raja	Rani	Particulars	Raja	Rani
To Drawings	10,000	8,000	By Balance b/d	80,000	80,000
To Balance c/d	90,350	92,350	By Profit	20,350	20,350
	1,00,350	1,00,350		1,00,350	1,00,350
			By Balance c/d	90,350	90,350

# Unit 1

## Part - A

### 1. Define scarcity and its features.

According to Lionel Robbins, “Economics is a science which studies human behaviour as a relationship between ends and scarce means which have alternative uses”.

#### Features:

- Ends are various the term ends means wants. Human wants are unlimited.
- Means are limited, means like time, money and resources are limited.
- We can put time and money to alternative uses.
- All wants are not equal importance.

### 2. What do you mean by discounting principle?

The discounting principle is based on the principle that a rupee tomorrow is worth less than a rupee today. When a firm makes an investment which is expected to yield returns over a period of time, it is necessary to find out its net present worth. The rate of returns will be different for various investment proposals. According to the discounting principle, it is necessary, to discount costs and revenues to present values when an alternative decision affects costs and revenues in future period.

### 3. Difference between accounting profit and economic profit?

Accounting Profit	Economic Profit
It is the monetary cost a firm pays out and the revenue a firm receives. Accounting profit = Total Monetary cost – Total cost	Economic profit is the monetary cost and opportunity cost a firm pays and the revenue a firm receives. Economic Profit = Total revenue – Explicit cost + Implicit cost.
Accounting profit consists of Revenue – Explicit cost.	Economic profit consists of Revenue – Implicit (opportunity) and Explicit(monetary)

### 4. Define Opportunity cost.

“It means that the cost of using something in a particular venture is the benefit foregone (or) opportunity lost by not using in its best alternative uses.”

The opportunity cost means the cost of foregone opportunities.



According to Benham “The opportunity cost of anything is the next best alternative could be produced instead by the same factors or by an equivalent group of factors, costing the same amount of money”.

### 5. What is Incremental Principle?

The economists make use of the incremental principle in the theories of consumption, production, pricing and distribution. “In price determination, this principle states that a firm would maximise its profits if it equates marginal costs to its marginal revenue”. This principle guides a business manager that he should expand his business in each direction only so long as the incremental benefit to his firm is more than the incremental costs. i.e. the moment the incremental benefit (marginal revenue) is equated to the incremental cost (marginal cost), it is the point where the activity has to be limited.

### Part - B

### 6. Difference between positive and normative economics?

Positive Economics	Normative Economics
It expresses “What is”	It expresses “What should be”
It is based on cause and effect of facts	It is based on ethics
It deals with actual or realistic situation	It deals with idealistic situation
It can be verified with actual data	It cannot be verified with actual data
It deals with how an economic problem is solved	It deals with how an economic problem should be solved
Examples: Government has adopted policies to reduce unemployment The rate of inflation in India is 6%	Examples: Unemployment is worse than inflation. The rate of inflation should not be more than 6%

### 7. What is economic efficiency? State the elements of efficiency.

Efficiency in economics is any situation in which resource allocation maximizes social welfare. It serves as a basis for recommending sound economic policies which may increase the social welfare of any nation. Efficiency is defined as an allocation of resources from which no person can be made better off without making another person worse off.

#### Elements of efficiency:

- i) Objectives well defined and translated into targets to be achieved.
- ii) Technical efficiency of the equipment.
- iii) Labour productivity with given equipment and its own level of skill.
- iv) Organisation and Operational efficiency to be determined by given constraints.

**8. Define welfare in the words of Alfred Marshall and its main features. Alfred Marshall (1842-1924) wrote book principles of economics in 1890.**

He defined economics as “A study of mankind in the ordinary business of life, it examines that part of individual and social action which is more closely connected with the attainment and use of material requisites of well- being”.

**Features:**

- i) Economics is the study of income-earning and income spending activities of daily life.
- ii) It is the study of economic activities of a society that promotes material welfare of human beings.
- iii) The definition emphasised the importance of man because wealth was for man and man was not for wealth.
- iv) The definition makes economics both a social science and a normative science.

**9. What are the Merits and Demerits of Mixed economy? Merits:**

- Has all the merits of the market system: Private initiative, profit motive, freedom of enterprise, price Mechanism exists.
- Enjoys the advantages of a socialist economy: Social internet, welfare motive, stability and balanced development, maximise productivity, etc. exists.

**Demerits:**

- Fear of nationalisation: A serious criticism is that it may not be possible to maintain a mixed economy for a long time.
- Inefficiency and corruption: Is characterised by red tapism, high degree of corruption and absence of competition. Thus leads to slowing down of economic growth, wastefulness and economic inefficiency.
- Concentration of economic power: Rests in the hands of private sector, politician and top bureaucrats.

**10. What are the main divisions of Economics?**

- a. **Consumption:** Satisfaction of human wants is called consumption, which forms the important branches of economics. This tells how people behave in consumption of goods and services in order to maximise their satisfaction.
- b. **Production:** Goods and services have to be produced with the help of factors of production. This tells how maximum goods are produced with minimum cost or how the scarce factors could be utilised economically for better results.
- c. **Exchange:** Goods and services cannot be produced at one place or at one point of time. Goods produced by one exchanged for the goods produced by the other. Exchange refers to the movement of goods or services from the producer to the consumer.
- d. **Distribution:** Goods and services are produced with efforts i.e. by combining the factors of production. These effect have to be paid for or rewarded.

- e. **Public Finance:** This studies about the sources of revenue to the government and the principle governing expenditure for the benefit of the people. It studies about public debt and financial administration.

## Part - C

### 11. Critically examine Adam smith's definition of economics.

- "An inquiry into the Nature and causes of wealth of nations" in the year 1776. According to smith, was the study of wealth, how to increase its production and how to distribute it.

#### Features of Adam smith's definition.

- Study of wealth Economics deals with the study of wealth of Naon.
- This definition conveys the feeling that economics constitutes only material commodities.
- Stress on wealth. Since the main aim of the political economy is to increase the riches of the economy.
- Cannes of wealth.
- Economics is considered as study of causes of wealth.

The definition considered production, distribution and exchange of wealth. The definition of Smith was not appreciated. The term wealth was mistaken to be "money". This gave rise to serious misunderstanding of the nature of economics. It emphasised "wealth" ignoring man.

#### Criticisms:

- i) To him, economics is concerned with only production and distribution of wealth. The omission of the other two economic activities viz, consumption and exchange, is a serious lapse.
- ii) Classical economists ignored the importance of immaterial things such as health, education, good administration, etc, in the economic growth of a country.
- iii) The wealth definition narrows down the scope of economics. It does not link economics with any human activities and social welfare. Wealth is only a means to an end, the end being the social welfare.
- iv) The definition shows a biased attitude by treating right to private property or wealth as natural and moral right.

In spite of all these criticisms, credit was given to Smith for having made a systematic attempt to define economics. The wealth definition was considered to be unscientific, unsatisfactory and incomplete. Therefore this definition was discarded towards the end of the 19th century.

## **12. How time perspective plays an important role in economic theory?**

Time plays an important and dominant role in economic theory, particularly in the field of “Pricing”. It was Marshall who introduced the element of “Time” in value theory. He conceived four market forms based on time, viz., very short period, short period, long period and very long period/secular period. According to Marshall, very short period is a time interval in which the market supply is almost fixed and it cannot be changed because the factors of production are fixed. Eg. Perishable commodities. Supply cannot be changed in a very short period; hence, demand plays a decisive role in determining the price.

In short period, the commodity is non-perishable and also reproducible. Short-run period refers to a period of time which is long enough to allow the variable factors of production to be used in different amounts in order to ensure that maximum profit are earned, but during which period, the fixed factors cannot be changed. Long period refers to a period of time which is long enough to bring about possible variations in all inputs. It is the time in which an entirely new plant can be erected. Business Economists are also concerned with the short-run and long-run effects of decisions on revenues as well as costs. The principle of time perspective has been defined by Haynes, Mote and Paul as ‘decision should take into account both the short run and long run effects on revenues and costs giving appropriate weight to the most relevant time periods.

Thus an important problem in decision-making is to maintain the right balance between the long run and short run considerations.

## **13. Describe the scope of business economics.**

According to Mc Nair and Meriam “Business economics deals with the use of economic modes of thought to analyse business situation”.

### **Scope of Business Economics:**

Business economics deals with the decision process, decision model and decision variables at the firm level. The subject matter of business economics can be classified under six heads. Which are as follows

**1. Demand Analysis and forecasting:** Demand forecast serves as a guide to the management for maintaining its market share in competition with its rivals there by securing its profit. It deals with demand, determination distinctions, forecasting etc.,

**2. Cost and Production Analysis:** A firm’s profitability depends much on its cost of production. Production process under the charge of engineers but the business manager works to carry out the production function analysis in order to avoid wastages of materials and time.

**3. Pricing Decisions, Policies and Practices:** A firm’s income and profit depend mainly on the price decision and the pricing policies. It deals with market structure analysis pricing practices & forecasting.

**4. Profit management:** It is profit which provides the chief measures of success of a firm. Economists say that profits and the reward for uncertainty bearing and risk taking.

**5. Capital management:** The most challenging problem for a modern business manager is of planning capital investments. It means capital management i.e. planning and control of capital expenditure. It deals with cost of capital rate of return and selection of projects.

#### **14. Discuss the Importance of Business Economics.**

**Introduction:** Business economics is a useful subject. In fact it is the most significant of all social sciences. Business economics became the intellectual religion of the day. The theoretical and practical utility of business economics is discussed in the subsequent passages.

##### **i) Theoretical significance**

- Understanding economic behaviour: The study of business economics helps us to understand the economic behaviour of human beings.
- Working of the economic system: Business economics explains the conditions, which influence the progress of the economy.
- Intellectual value: The knowledge about business economics sharpens the intellectual calibres of individuals.
- Provides economic tools: Economics is considered as a box of economics tools. It provides a good knowledge regarding the nature, causes and effects of various economic phenomena.
- Economic growth: Business economics suggests various ways and means for maintaining the growth rates in the developed economies.
- Provides for economic development: Business economics enables us to understand the nature and conditions necessary for the successful organization of business firm.
- Performance of the economy: Business economics helps us to assess the performance of the economy.
- Provides knowledge about economic planning: Economics provides a good knowledge and information regarding the techniques of economic planning.
- Prediction of Economic Events: Business economics serves as the best means for predicting the economic events.
- Inculcates Ethical Value: Business economics inculcate certain ethical norms like honesty, responsibility and adjustability.

##### **ii) Practical significance: Business economics possesses practical significance in the following respects:**

- Useful to the finance minister, the minister for planning, the Bankers, the Trade Union Leaders, the Businessmen, the Statesman and useful in Solving “International Economic Problems.

**15. Explain Production possibility Frontiers: (PPF) Introduction:**

Production possibility Frontiers or Production Possibility Curve (PPF) is known that an increase in the production of one commodity reduces the production of the other commodity. In this way available resources can be used alternatively to produce different combination of goods and services. This is known as “production possibility”.

**Assumptions:**

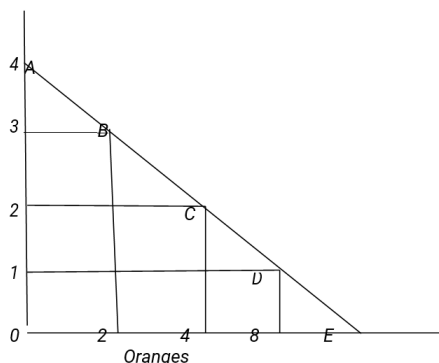
- i) The economy produces two commodities only.
- ii) Amount of resources available in an economy are given.
- iii) Resources are not specific and fully employed
- iv) *State of technology in an economy is given and remains constant.*
- v) *The prices of factors of production are constant.*

**Production possibility Schedule**

Production possibilities	Quantity of apples	Quantity of oranges
A	4	0
B	3	2
C	2	4
D	1	6
E	0	8

In the above schedule A and E are possibilities where the economy either produces 100 percent of apples or 100 percent of oranges alone. But the production possibility curve assumes the production of two goods in different combinations. Possibilities A, B, C, D and E are such that the economy produces 4 units of apples and 0 units of oranges in possibility A, 3 units of apples and 2 units of orange in possibility B, 2 units of apples and 4 units of oranges in possibility C, 1 unit of apple and 6 units of oranges in possibility D, 0 unit of apples and 8 units of oranges in possibility E.

**Production Possibility Curve**



Thus we see that if we are willing to have more of oranges, we should be willing to sacrifice more of apples. For instance, to reach possibility C from B, the economy produces 2 units more of oranges by sacrificing 1 unit of apples. A full employment economy must always in producing one good be giving up something of another. This assumes of course, that at least some resources can be transferred from one good to another.

The curve A and E depict the various possible combinations of the two goods- A, B, C, D and E. Thus a list of all the possible combinations of apples and oranges makes up production possibilities. The production possibility curve is also known as transformation curve or production possibility frontier.

All possible combinations lying on the production possibility curve show the combinations of the two goods that can be produced by the existing resources. Production possibility frontier certainly indicates economic development. This is possible by technological advancement and increase in supply of factors of production.

## Unit 2

### Part - A

#### 1. What is demand? Mention the types of demand?

Demand is the amount of particular economic goods or services that a consumer or group of consumers will want to purchase at a given price at a particular time.

Demand = Desire to buy + Ability to pay + Willingness to pay Types:

- Extension and contraction in Demand.
- Increase and Decrease in demand.

#### 2. What is the meaning of law of Demand and definite it?

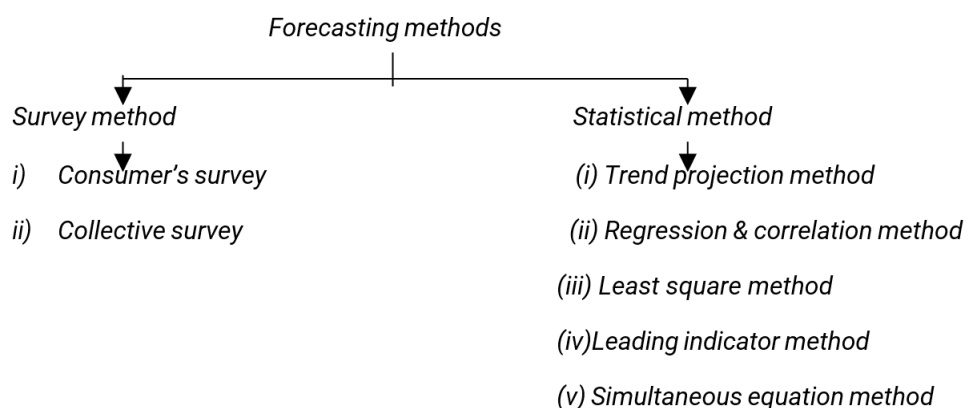
The law of demand states that, 'other things being constant, when the price of a commodity rises, the demand for that commodity falls and when the price of a commodity falls, the demand for that commodity rises'. According to Alfred Marshall, "The greater the amount to be sold, the smaller must be the price at which it is offered in order that it may find purchasers; or, in other words, the amount demanded increases with a fall in price and diminishes with a rise in price".

#### 3. State the various conditions of law of supply.

The law of supply is conditional, since we have stated it under the assumption:

- (i) No change in Cost of production
- (ii) No change in method of production
- (iii) Fixed scale of production
- (iv) Government policies are unchanged
- (v) Unchanged transport cost
- (vi) No speculation
- (vii) The prices of substitutes are held constant

#### 4. What are the various Methods of Demand Forecasting?





### 5. What are the methods of Measuring Elasticity of supply?

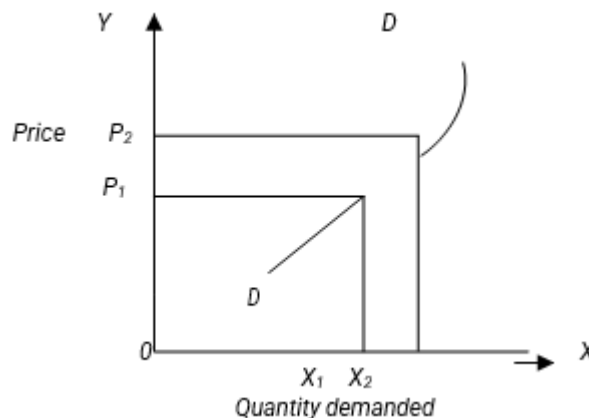
i) The Ratio Method: The numerical co-efficient of the degree of elasticity of supply is obtained by using the ratio method. The co-efficient of elasticity of supply may vary between zero and infinity.

ii) The Point Method: On a given supply curve, the elasticity of supply at a point P is measured by the ratio of the distance along the tangent from the point P on the supply curve to the point where it intersects the horizontal axis and the distance along the tangent from the point P on the supply curve to the point where it intersects the vertical axis.

### Part - B

#### 6. Exceptions to the law of demand:

There are certain cases where the law of demand gets violated like i) War or Emergency ii) Expectation of Price Rise in Future iii) Demonstration Effect iv) Ignorance v) Necessities of Life. That is, there is a direct relationship between price and quantity demanded of a good. If price rises, demand also rises and vice versa.



In such a case demand curve slopes up from left to right. It is called as the positive slope as shown in the figure. Sir Robert Giffen is the first person to expose this rare occasion, which is known as “Giffen Paradox”.

In the figure, DD is the positive sloping demanded curve (upward slope). When the price is  $OP_1$ , the quantity demanded is  $OX_1$ . As the price rises, to  $OP_2$ , quantity demanded also rises to  $OX_2$ .

Therefore, the positive sloping demand curve shows the direct relationship between price and demand.

## **7. Explain the Importance of the law of demand.**

The law of demand has great theoretical and practical importance in economics as:

- i) Price determination:** The law of demand is useful to the monopolist to fix the price of their product.
- ii) Importance for the consumer:** The law tells that the fall in price, the consumer will buy more and vice versa. Thus, the consumer maximises his satisfaction.
- iii) Importance to Finance Minister:** While imposing the tax, he keeps in mind the law of demand. He comes to know through law, the effect of tax on amount demanded of various commodities. Moreover, he will impose more taxes on commodities which have relatively inelastic demand.
- iv) Importance for planning:** The planning Commission while framing the plan keeps in mind not only the demand schedule but also the effect of price on a commodity.
- v) Importance for producers:** The law provides guidelines to the producers regarding the production of those goods whose prices have reduced. The law is for the welfare of the producers to concentrate on the production of those goods whose price have been reduced.

## **8. Why does the demand curve slope downwards?**

- i) Law of diminishing marginal utility:** The law was formulated by Alfred Marshall and he states that as the consumer has more and more of a good its marginal utility to him goes on declining. A consumer is not interested in buying more units of the same commodity at the same price. Instead, he is ready to pay a price equal to his marginal utility and marginal utility goes on diminishing. In other words, he is willing to pay a lesser price for more units of a good. This implies that demand curve is downward sloping.
- ii) Substitution effect:** When the price of good rises, consumer feels that relative prices of other goods have reduced, so the consumer prefers to buy less quantity of the good whose price has risen.
- iii) Income effect:** Increase in income means increase in the purchasing power of the consumer. With fall in the price of a good, consumer's real income or purchasing power rises and he demands more units of the good. When price falls, demand rises.
- iv) New consumers creating demand:** As price of a commodity falls, new consumer class appears, who can now afford the commodity. Thus, the total demand for the commodity increase, i.e. with fall in price, quantity demanded rises.
- v) Several uses:** Some commodities can be put to several uses which leads to downward slope of the demand curve. When the prices of such commodities go up they will be used for important purposes. So their demand will be limited. On the other hand, when the price falls, the commodity in question will extend its demand.
- vi) Psychological effects:** When the price of a commodity falls, people favour to buy more, which is natural and psychological. Therefore, the demand increases with the fall in prices.

**9. Describe the objectives of Demand Forecasting.**

**a) Short-term Objectives:**

- i) Formulation of production policy
- ii) Price policy formulation
- iii) Suitable purchase policy
- iv) Fix sales targets
- v) Fix short – term financial plans
- vi) Regular availability of labour

**b) Long-term Objectives**

- i) Financial planning
- ii) Man power planning
- iii) To decide about expansion.

**10. State the various Demand Distinctions.**

- i) Demand for producer's goods and consumer's goods.
- ii) Demand for perishable goods and durable goods
- iii) Derived demand and autonomous demand
- iv) Industry demand and company demand
- v) Short run demand and long run demand
- vi) Joint demand and composite demand
- vii) Price demand, Income demand and Cross demand
- viii) Total market and market segment demand,

**Part - C**

**11. Mention the Determinants of Demand / Factors Affecting Demand.**

There are many economic, social and political factors or determinants which greatly influence the demand for a commodity.

Some of these factors are as noted below:

- i) Price of a commodity:** The foremost significant factor which influences the demand is the price of the commodity. It causes an inverse change in the demand for commodity.
- ii) Price of related goods:** Demand is also influenced by the change in the price of the related goods. These goods are of two types viz. Substitute goods or complementary goods.
- iii) Income of the consumer:** This is another factor which influences demand. Generally there is direct relation between income of the consumer and his demand.
- iv) Distribution of wealth:** The amount demanded of a commodity is also influenced by the distribution of wealth in the society.

- v) **Tastes and preferences:** This factor influences the demand to a greater extent. They include fashion, habits, customs, advertisements, climate, new inventions, etc.
- vi) **Government policy:** The government imposes taxes on various goods that lead to an increase in the price of the goods, as a result demand goes down.
- vii) **State of Business:** The demand for commodities also depends on business conditions prevailing in the country or region. During the period of depression, the market demand will be on the lower side.
- viii) **Population growth:** Increase in population leads to an increase in demand for all type of goods, whereas decrease in population means less demand for such commodities. Moreover, composition of population also affects the demand.
- ix) **Existence of substitutes and the price of substitutes:** The existence of a number of alternative goods to satisfy a given demand will naturally divide the total demand between the different goods.
- x) **Expectations of consumers about the future:** If a consumer anticipates a rise in prices in the near future, they will start demanding larger quantities of the particular product and vice versa.

## 12. What are the various types of demand?

Consumers demand of a commodity or a service may refer to the various quantities of a given commodity or service, which consumers would buy in a market in a given period of time at various prices or at various incomes or at various prices of related goods.

- i) Demand related to the price of that commodity i.e, Price demand.
- ii) Demand related to the income of the consumers i.e Income demand and
- iii) Demand of a commodity related to the price of other commodities i.e Cross-demand

**i) Price demand:** It refers to the various quantities of the commodity which the consumer will buy per unit of time and at certain price. [Other things remaining the same.] The quantity demanded changes with the change in price. The quantity demanded and price have a negative correlation as

$$D_A = f [P_A ]$$

Where,  $D_A$  -

Demand of commodity  $A$   $f$

- Function

$P_A$  - Price of the commodity  $A$

ii) **a) Income demand** [Normal goods]: Being ceteris paribus, the income demand indicates the relationship between income and demand of the consumer. The income demand shows how much quantity a consumer will buy at different levels of his income. Generally, there is a positive relationship between income and demand of the consumer i.e.,  $D_A = f [Y_A ]$

$D_A$  - Demand of commodity A  $Y_A$

- Income of the consumer A

**b) Income demand** [Inferior-goods]: The relationship between income and demand becomes negative. It is due to the reason that so long as the income of the consumer remains below a particular level of minimum subsistence, he will continue to buy more of inferior goods even when his income increases by small increments.

**iii) Cross-Demand** It refers to the relationship between quantity demanded of good 'A' and price of related good 'B', other things being equal. Cross demand we mean change in the quantity demanded of a commodity without any change in its price but due to the change in the price of related goods i.e. B commodity.

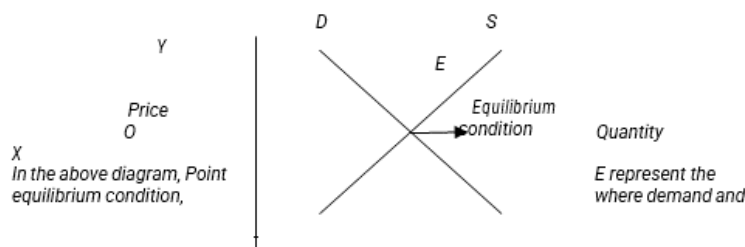
### 13. Explain the various types of forecasting.

Prof. Christopher and John R. Small classify demand and sales forecasting at different levels. They are:

- i) **Micro level or at the level of Firm:** It is related to an individual firm, in which the management of a firm is really interested.
- ii) **Industry level:** It is made available by trade association or chamber of commerce to its members. A firm can make use of this data for comparison with the industry.
- iii) **Macroeconomic Forecasting:** It is concerned with business conditions over the whole economy, usually measured by appropriate index or estimate of industrial production. National income or expenditure etc.
- iv) **Short term Demand forecasting:** It is limited to short period not exceeding one year. This is required for current production scheduling, purchases of raw materials and inventory of stocks, etc.
- v) **Long term demand forecasting:** It involves the assessment of long-term demand for the product and involves expansion of production units. This is useful in making major strategic decisions.
- vi) **Medium term demand forecasting:** It is intermediate between the short term and the long term situations. Its need is felt to a firm, which is subjected to the trade cycle of a medium term. [varying between say two to five years.]

### 14. Equilibrium of the maximisation or profit maximisation:

- i) Equilibrium in economic analysis is a condition in which the forces operating are such that there will not be any inclination on the part of the consumer or producer to change their directions.
- ii) A firm is said to be in equilibrium when it has reached to most profitable position where it can maximize its profit.
- iii) A firm is said to be in equilibrium when it has no tendency to change its level of output i.e either to increase or decrease the output. The firm produce the equilibrium output and sell at the equilibrium price which means earns maximum profit.



supply cuts each other. There exists the equilibrium price and firm earns maximum profit.

### 15. List out the Determinants of price elasticity of demand.

Factors which determine the price elasticity of demand for a commodity or service are more in number. They are as follows:

- a) **Nature of the commodity:** Generally commodities can be divided into the three categories i.e,
  - i) **Necessaries of life:** The demand for these goods is inelastic because people buy the required amount of goods whatever the price.
  - ii) **Conventional necessities:** The demand is elastic or inelastic Eg: drunkards consider opium and wine almost as a necessity as food and water.
  - iii) **Luxury commodities:** The demand is usually elastic as people buy more of them at a lower price and less at a higher price. Luxury is a relative term, which varies from person to person, place to place, and from time to time. Eg: What is luxury to a poor is a necessity to the rich.
- b) **Substitutes:** Demand is elastic for those goods which have substitutes and inelastic for those goods which have no substitutes. The availability of substitutes, thus, determines the elasticity of demand. For ex: tea and coffee are substitutes.
- c) **Number of uses:** Elasticity of demand for any commodity depends on its number of uses. Demand is elastic, if a commodity has more uses and inelastic if it has only one use. Ex: coal has multiple uses.
- d) **Postponement:** Demand is more elastic for goods whose use can be postponed and inelastic for those goods which is urgent and cannot be postponed. Eg: silk for former and medicine for the latter.
- e) **Raw material and finished goods:** The demand for raw materials is inelastic but the demand for finished goods is elastic.
- f) **Price level:** The demand is elastic for moderate prices but inelastic for lower and higher prices.
- g) **Income level:** The demand is inelastic for higher and lower income groups and elastic for middle income groups.
- h) **Habits:** If consumers are habituated of some commodities, the demand for such commodities will be usually inelastic.
- i) **Nature of expenditure:** Elasticity also depends as to how much part of the income is spent on that particular commodity.
- j) **Distribution of income:** If the income is uniformly distributed in the society a small change in price will effect the demand of the whole society and the demand will be elastic.

## Unit 3

### Part - A

#### 1. What do you mean by scale of preference?

Consumers formulate the scale of preferences on the basis of level of satisfaction. Level of satisfaction is drawn on the basis of mental attitude to the commodities. The taste of the consumer is the scale of preference. Scale of preference is the basis for indifference curve. Scale of preference is a measure which is used to compare the utilities and to select the combination of commodities. The concept of scale of preference has been given practical shape through indifference curve technique. The first commodity in the scale gives the consumer greater utility and the utility descend in the order of importance.

#### 2. Differentiate between Marginal Rate Substitution and Diminishing Marginal Utility.

- i) MRS has no subjective element in it. It simply tells us as to how much amount of one commodity the consumer loses to attain amount of another commodity. In such a situation, the consumer still remains on the same IC.
- ii) It does not think of independent utilities. It allows complimentary and substitution. In this sense, it is a wider concept than diminishing marginal utility.
- iii) MRS does not require the assumption of constant marginal utility of money. It deals with physical amounts of the commodity. On the other hand, the law of DMU cannot do without this assumption.

#### 3. What is Total Utility?

Total Utility means the total satisfaction received by the consumer by the consumption of all units taken together at a time. It is the aggregate of the utility that a consumer derives from the consumption of a certain amount of commodity.

In mathematical terms, total utility is a direct function of the number of units of a commodity. It can be written as,  $T_{ux} = f [Q_x]$

#### 4. Mention the importance of the law of Diminishing Marginal Utility.

- a) **Basic of economic law and concepts:** This law of Diminishing Marginal Utility forms the basis of law of demand, law of Equi-marginal utility, elasticity of demand etc.
- b) **Public Finance:** The Govt. can impose and justify progressive income tax on the ground of this law, as the income increases, the MU of income diminishes.
- c) **Businessmen:** A businessman or producer can increase the sale of his product by fixing a lower price. Since consumers tend to buy more to equate MU with price, a producer can expect a rise in sale.

**5. Define the theory of revealed preference.**

According to Paul Samuelson, a consumer with a given income will buy a mixture of products; as his income changes, the mixture of goods and services will also change.

Revealed preference theory works on the assumption that consumers have considered a set of alternatives before making a purchasing decision.

Thus, given that a consumer chooses one option out of the set, this option must be the preferred option.

**Part - B**

**6. State the defects of Cardinal analysis.**

- i) Cardinal measurement of utility is unrealistic.
- ii) Utility is not measurable.
- iii) Hypothesis of independent utilities is wrong.
- iv) Marginal utility of money does not remain constant as assumed.
- v) Ignores income effect and substitution effect.
- vi) Does not explain the demand for indivisible goods.
- vii) Money is not a satisfactory measure of utility.

**7. State the various assumptions of Consumers Equilibrium.**

- i) Consumer is rational and so maximizes his satisfaction from the purchase of two goods.
- ii) Consumer's income is constant.
- iii) Prices of the goods are constant.
- iv) Consumer knows the price of all things.
- v) Consumer can spend his income in small quantities.
- vi) Goods are divisible.
- vii) There is perfect competition in the market.
- viii) Consumer is fully aware of the indifference map.

**8. List out the similarities between Marshallian Utility Analysis vs. Indifference Curve Analysis.**

- i) Rationality of the consumer: Both analyses assume that the consumer acts rationally and tries to maximise utility or satisfaction. In Marshallian analysis, the consumer attempts to maximise utility in quantitative term, while IC analysis, he tries to reach the highest curve possible and there by maximises his satisfaction.
- ii) ii) Conditions of equilibrium: The conclusions drawn by both the analyses are same regarding the consumer behaviour.
- iii) Diminishing Utility: In both analyses, diminishing utility is assumed.
- iv) Psychological approaches: Both employ psychological or introspective method.
- v) No new conclusion: Both reach the same conclusion. Nothing is new in these different approaches.



**9. State the criticisms of the Law of Diminishing Marginal Utility.**

- i) The utility is a mental phenomenon and it cannot be measured by money. Quantification of utility is highly imaginary. We cannot have an objective measurable of a subjective feeling.
- ii) The law assumes constant marginal utility of money. This is highly unsatisfactory.
- iii) In practical life, nobody consumes the commodity in succession without interval of time nor does anyone consume till the point of satiety.
- iv) The logical defect is that the law takes it for granted that the physical capacity of the human being is limited. In that case, the additional units consumed should give only lesser satisfaction. Instead of proving the law, it was taken for granted.

**10. State the assumption of law of Diminishing Marginal Rate of substitution.**

- i) One commodity will have to be increased while the other will have to be decreased if the consumer has to remain in the same curve which means the same satisfaction.
- ii) The commodity which is increased has lower marginal significance and as such it cannot substitute for the same amount of other commodity, but only for less of the other.
- iii) The commodity which is decreased has higher marginal significance and therefore cannot be substituted in the same ratio by the other commodity; the rate of substitution will have to decline.

**Part - C**

**11. Explain Budget line.**

The price line or budget line of the consumer is given by his total money income than he would like to spend on a combination of two goods. It shows the limit of how much he can spend.

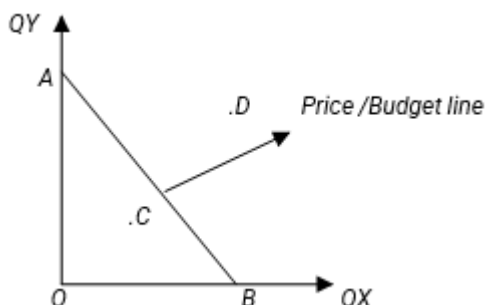
It is also known as the consumption possibility line, line of attainable combinations or opportunity line.

According to Ferguson “The price line shows the combinations of goods that can be purchased if the entire money income is spent”.

According to Prof. Hibdon “The budget line shows all the different combinations of the two commodities that a consumer can purchase, given his money income and the price of two commodities”.

Thus, the consumer has a given income which is a constraint to his maximising behaviour.

The budget constraint shows all the possible combinations of the two goods that can be bought by a consumer, given income and prices of goods. A budget constraint can be graphically illustrated as a straight downwards sloping line.



OA – If the consumer spends all his income on good Y, he can Buy OA units of Y.

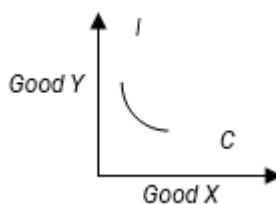
OB – If the consumer spends all his income on good X, he can buy OB units of X AB – Budget line or consumption possibility line. A consumer can buy any combination of X and Y that lies on or to the budget line. Since, by assumption there are no the budget set.

$\Delta$  AOB – Right –angled triangle formed by the budget line with the axes. It is called the Budget set.

Slope of budget line =  $OA/OB = P_x / P_y$

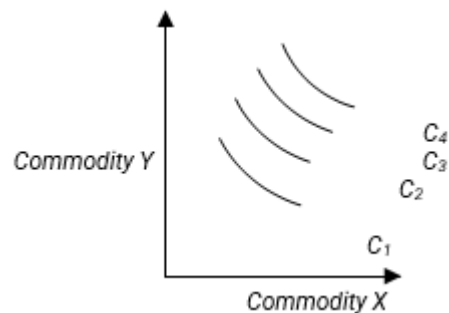
## 12. Differentiate between Indifference curve and Indifference map. Indifference curve.

An indifference curve is the locus of the combination of two goods that are equally satisfactory to the consumer or to which the consumer is indifferent. i.e. different combinations of two goods that yield the same level of satisfaction to the consumer. IC curve is defined as “the locus of various combinations of the two commodities which yield the same total satisfaction to the consumer”. The curve is also called “ISO – Utility Curve”.



An indifference curve is drawn with one commodity in the X axis and another commodity in the Y axis. The various combinations are plotted and joined to form a curve called indifference curve. All the points on this curve give equal satisfaction to the consumer Indifference map.

A consumer can have any number of indifference curves for the two commodities showing different levels of satisfaction. An indifference map may show all the indifference curves which rank the preferences of the consumer. It is a collection of many indifference curves where each curve represents a certain level of satisfaction. A family of indifference curve is called indifference map.



Indifference map shows a set of four indifference curve IC1, IC2, IC3, IC4 reflecting different levels of total utility, moving away from the origin. It moves the consumer to higher levels of utility. IC1 represents a lower level of satisfaction, IC2 is higher level of satisfaction, and IC3 and IC4 still higher level of satisfaction. The consumer will always prefer to be in higher indifference curve to get maximum satisfaction, other things being equal.

### 13. What are the characteristics of Utility?

- **Utility is Subjective:** The utility of a commodity is always subjective because it depends upon the consumer as much as on commodity. For example coffee gives satisfaction to one and dissatisfaction to another. It is the psychological feeling of the consumer. Utility is therefore internal and not external.
- **Utility is Relative and Variable:** It varies from person to person and sometimes from time to time for the same person. When a commodity gives utility it gives different amounts of utility to different people. The amount of utility depends not only on his mental attitude but also on the intensity of his desire for the commodity. It varies from times to time and place to place. For example – woollen gives utility in cold places than in hot places.
- **Utility is not Measurable:** It cannot be measured by any measuring rod. It can be quantified. Hence, it cannot be added or subtracted. It is thus having an immeasurable magnitude.
- **Utility and Pleasure:** It is not necessary that a commodity possessing utility also gives pleasures whenever it is consumed. Medicine possesses utility for a patient, though it is not preferred. In this way, it can be stated that there is no relationship between utility and pleasure.
- **Utility and Usefulness:** A commodity having utility need not be useful. Cigarette and liquor are harmful to health, but if they satisfy the want of an addict then they have utility for him.
- **Utility and Morality:** Utility does not possess any moral or ethical importance. It is only related with satisfaction of human wants.

### 14. Explain Marshall's Consumer Surplus.

Marshall formulated the concept of consumer surplus based on the law of Diminishing Marginal Utility. According to the law of DMU, as the consumer has earlier units of the good, MU is greater but as he increases his consumption of the good MU diminishes. In

other words, a consumer is willing to pay more than the market price in order to have the first few units, but he actually pays less. "The excess of amount the consumer was willing to pay but does not have to pay is called consumer surplus". It is graphically illustrated:

Dd – Consumer's demand curve for good X

OP – Consumer demand OQ units of good at price OP Price actually paid

By the Consumer – OP x OQ Rectangle OPMQ

Amount the consumer is – area under the demand curve ORMQ

Therefore, consumer surplus – Area between the demand curve and the price axis above the market price shaded area RPM

### **Uses of Consumer Surplus**

- i) The concept gives an assessment of enjoyment of real income, i.e. total utility derived from the consumption of a commodity is always more than the price paid for it.
- ii) The higher the consumer surplus, the more advanced is an economy. Thus, the concept tells us the state of an economy.
- iii) The concept is widely used in determining monopoly prices i.e. in discriminating monopoly the monopolist charges according to the consumer surplus of the consumers.
- iv) The concept helps in finding out the relative merit and different types of taxes. A tax raises the price and reduces consumer surplus.

### **Limitations of consumer's surplus**

- i) Utility or satisfaction cannot be measured in money units.
- ii) It is difficult to find the amount of consumer is willing to pay. In a calamity, consumer may be willing to pay more.
- iii) The demand schedule is hypothetical and imaginary.
- iv) The consumer surplus derived from a commodity is affected by the availability of substitutes.

### **15. Critically Evaluate Indifference Curve Analysis.**

- i) The analysis is based on unpractical assumption that the consumer possesses complete knowledge of all his scale of preferences. This approach is criticised as unreal, highly imaginative and expecting too much from the mind of a man.
- ii) The consumer can express his preference in simple cases of combinations between two commodities. If it is a question of three or more commodities the illustration becomes difficult and resource to complicated mathematics would be taken up which will altogether conceal the economic point.
- iii) The important criticism is that the entire analysis is imaginary and it is not amenable to empirical research. It is not easy to collect data regarding the preferences of individual consumers.

- iv) Prof. Samuelson points out that the analysis is made on the ground of imaginarily drawn indifference curve regarding the behaviour of the consumer. Based on this defect he developed “revealed preference theory”. IC analysis is based on “weak ordering hypothesis” – which means that the consumer does not make definite preference or strong ordering, choosing one to the other combination.
- v) This analysis is highly micro-economic in character. It deals only with one consumer and that too with only two goods and studies the equilibrium of the consumer. To study the group behaviour it will not be possible.
- vi) VI) Another important drawback of this analysis is the “assumption of continuity” possessed by the geometrical field, but not in the economic world.
- vii) This could not analyse the individual behaviour when confronted with alternatives involving risks or uncertainty of expectation and could not explain the behaviour of the consumer satisfactorily.

## Unit 4

### Part - A

#### 1. Define

##### **Production.**

The term “Production” is used for creation of those goods and services which have an exchange value and creation of economic utility. Production can take place only with the combination of factors of production viz. land, labour, capital and organization. It includes various processes to add utility to natural resources for gaining more satisfaction.

According to Hicks, “Production is any activity directed to the satisfaction of other people’s wants through exchange”.

#### **2. What are the assumptions of the law of variable proportions? The law is based upon the following assumption:**

- i) The state of technology in production remains constant and unchanged.
- ii) Only one factor of input is made variable and other factors are kept constant.
- iii) All units of the variable factor are homogeneous.
- iv) The entire operation is for short run, as in the long run all inputs can be variable.

#### **3. What are the features of an Entrepreneur?**

- a) It is an entrepreneur who hires, organizes and utilizes land, labour and capital for the task of production.
- b) The reward or price of an entrepreneur is not certain an entrepreneur is not certain and cannot be decided in advance.
- c) In case an entrepreneur suffer losses, his rewards can be negative, while the prices of other factors are always positive.

#### **4. What is Break Even Point?**

Break Even Point is that point of activity where total revenue and total expenses are equal. It is taken to indicating the minimum level of production/sales which a company has to undertake economically viable business activity. There are two approaches to represent a breakeven point.

- i) Graphic Method and ii) Algebraic Method.

#### **5. What is producer’s equilibrium?**

The producer comes to equilibrium when the marginal returns of the factors are equal over the unit of money spent. In practical life, the factors cost much more than a rupee. In such

case, additional output due to the marginal rupee spent on factor A would be equal to the marginal product of factor A divided by its price. The equilibrium position where there is no inducement for the producer to effect any further change in the proportions of the different factors.

## Part - B

### 6. Differentiate law of Variable Proportion and Returns to scale.

Returns to a factor and returns to scale are two different laws of production which do not contradict each other. The following table summarizes the difference between laws of variable proportions and returns to scale:

NO	Law of variable proportions	Law of Returns to scale
1	The law applies in the short run	The law applies in the long run
2	In this, the level of production is changed	In this, scale of production is changed
3	In this, only the units of variable factors are changed and the units of fixed factors remain the same	In this, all factors of production are changed in the same proportion.
4	There are three stages in this law: <i>a)</i> Increasing returns: In this stage, TP and AP rises, MP rises and starts falling <i>b)</i> Diminishing returns: in this stage, TP rises at a diminishing rate, AP and MP declines <i>c)</i> Negative returns: In this stage, TP and AP declines and MP becomes negative	There are three stages in this law: <i>a)</i> Increasing returns: it occurs when increase in output is more than proportional to increase in inputs. <i>b)</i> Constant returns: It occurs when increase in output is proportional to increase in inputs. <i>c)</i> Decreasing returns: It occurs when increase in output is less than proportional to increase in inputs.
5	Increasing returns are due to: <i>a)</i> Under- utilization of fixed factor <i>b)</i> Indivisibility of factors	Increasing returns are due to: Economies of scale. It includes both internal and external economies
6	Diminishing returns are due to : Use of fixed factor at output capacity	Decreasing returns are due to: Diseconomies of scale. These are basically managerial

### **7. What is division of labour and mention its different types.**

Division of Labour is an important features of modern production process which is associated with efficiency. When the process of production of an article is split up into several processes and each process is entrusted to a separate set of workers is called division of labour.

#### **Different types of Division of Labour:**

- a) Simple Division of Labour – It means the society is divided into major occupation. For example, Carpenter, Blacksmiths, Weavers and Goldsmiths etc. It may be called as functional division of labour.
- b) Complex Division of Labour – It refers to the production of an article is split up into a number of processes and sub process is carried out by a separate groups of people.
- c) Territorial Division of Labour – It refers to certain localities, cities or towns specializing the production of some commodities. It is called as localization of industries.

### **8. Explain the relationship between average and marginal cost.**

Relationship between AC and MC

Both AC and MC curves are U- shaped mathematically,  $AC = TC/X$  and

$$MC = \Delta TC / \Delta X$$

The MC curve has unique and important relationship with the AC curve:

- i) When AC is falling, MC is below AC
- ii) When AC is rising, MC is above AC
- iii) When AC is neither falling nor rising, MC is equal to AC.
- iv) There is a range over which AC is falling but MC is rising. MC curve cuts the AC curve at the latter's minimum point

### **9. What are the external diseconomies?**

External diseconomies are not suffered by a single firm but by the firms operating in a given industry. It arises to a firm in the form of rise in unit cost because of expansion of an industry. They are external cost that spill over into the cost of other firms.

Diseconomies arise due to much concentration, and localization demand industries beyond a certain stage.

- i) Diseconomies of Pollution
- ii) Diseconomies of strains on infrastructure
- iii) Diseconomies of high factor price



### 10. What are the properties of Iso – quants?

- a) An iso-quants slopes downwards from left to right, i.e, negatively inclined. This implied that for the same level of output, the quantity of one variable will have to be reduced in order to increase the quantity of other variable. The Iso-quants cannot i)
- b) Slope upwards, ii) be vertical and iii) be horizontal
- c) No two Iso-quants can cut each other or intersect. If it happens so, this would mean that there will be a common point on the two curves, and this would imply that the same amount of two inputs can produce two different levels of output, which is not possible.
- d) Iso-quants are convex to the origin. Because, as we increase the application of one input that of the other declines. This should result in a downward sloping curve.
- e) Higher Iso-quants indicates higher level of output and lower Iso-quants indicates lower level of output. In other words, Iso-quants lying to the right represent a larger output than those lying to the left, which indicates lower output.

### Part - C

### 11. Briefly explain about capital formation.

Capital formation means “an addition to the existing stock of capital”. It is defined as “surplus of production over consumption in an accounting year which is further used for production”. Capital formation is also called investment. It plays an unique position in economics development. Capital formation involves the production of capital goods such as machines, tools factories, transport equipments and electricity etc. are all used for further production of goods.

Importance of capital formation

- a) Determines the growth rate of an economy.
- b) Increase production.
- c) Raises the productive capacity of an economy.
- d) Raises employment opportunities.

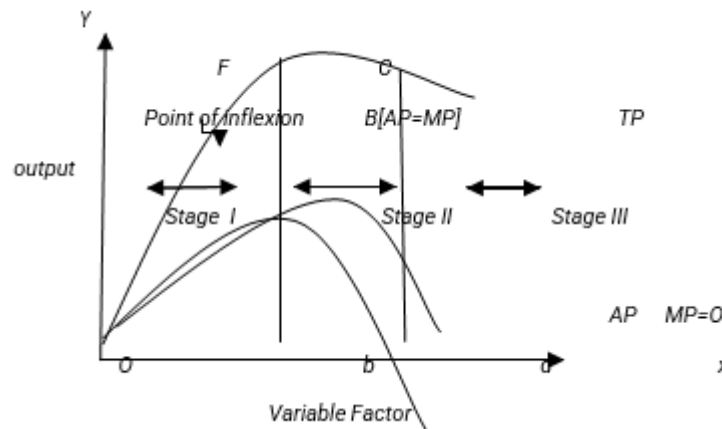
Stages/Steps in capital formation:

- a) Creation of savings – done by individuals/households, corporate sector, Government.
- b) Mobilization of savings – transferred to entrepreneurs i.e. circulation of saved money through financial institutions.
- c) Investment of savings – the process of capital formation gets completed only when real savings get converted into real capital assets.
- d) Foreign Capital – It is in the form of Direct private investment by foreigners, Loans or Grants by foreign Governments, Loans by international agencies like the World Bank
- e) Deficit financing is another source of capital formation for the country like India. Tax the people is more problematic for the Government.
- f) Disguised Unemployment is the another source of capital formation to mobilize the saving potential. The objective is to mobilize the unproductive workers and employ

them on various capital creating projects like roads, canals, school buildings and health centers etc

**12. Explain the three stages in the law of variable proportion. Stage I: Stage of Increasing Returns:**

TP increases sharply up to the point F, and afterwards, the TP increases at a diminishing rate as the MP falls, but it is positive. The point F where the TP stops increasing at an increasing rate and starts increasing at a diminishing rate is called the point of the inflexion. Stage I is called stage of Increasing Returns, since, the TP, MP and AP are increasing. A rational producer will not operate in this stage because the producer can always expand through stage I. It is a non economic range.



**Stage II: Stage of Decreasing Returns:**

Stage II of production ranges from the point where AP curve is maximum to the point where MP is zero [i.e. from point B to d]. In this stage, both AP and MP curves are positive but declining. TP curve continues to increase at a decreasing rate. The law of diminishing returns operates in stage II. The reason behind this stage lies in optimal use of fixed factor. The second stage is the stage of Diminishing Returns.

**Stage III: Stage of Negative Returns:**

It covers the entire range over which MP curve is negative. A rational procedure will not operate in this stage even with free labour because he could increase his output by employing less labour. It is non-economic and inefficient range. The reason behind this stage lies in over- utilization of fixed factor. This stage is called the Negative Returns stage. Thus, the TP, MP and AP pass through three phase's viz. increasing, diminishing and negative return stage. The law of variable proportion is nothing but the combination of the law of increasing and diminishing returns. The rational producer will not stop in stage I, but expand further. Stages I and III are stages of economic absurdity representing non economic region in production function. Hence the producer will produce in stage II where the TP leads to the maximum and this stage represents the range of rational production

### 13. Discuss the Internal Economies of scale.

Internal Economies are those economies of production which accrue to the firm when it expands the output so that the cost of production would come down considerably and place the firm in a better position to compete in market effectively. Economies arise purely due to endogenous factors relating to efficiency of the entrepreneur on his managerial talents or the type of machinery used or the marketing strategy adopted. These economies arise within the firm and help the firm only.

According to Cairncross, “Internal economies are those which are open to a single factory, or a single firm independently of the action of other firms. These results from an increase in the scale of output of a firm and cannot be achieved unless output increases”. The Internal Economies arise because of the action of an individual firm to economies its cost. They can be discussed as under.:

#### i) Technical Economics

- a) Economics of superior techniques
- b) Economics of increased dimensions
- c) Economics of linked processes.

#### ii) Marginal Economics

- a) Specialization of management
- b) Mechanization of managerial function

#### iii) Marketing or commercial Economics

- a) Economics of purchase
- b) Economics of sale

#### iv) Financial Economics

Financial economics refer to advantage secured by a firm in matters of finance. Large firms have high credits worthiness in the market.

#### v) Risk-Economics

- a) Output[Time., produce more than one product]
- b) Market [i.e, supply the product in more than one market]
- c) Sources of supply [i.e get the supply of raw materials from more than one source]
- d) Process of manufactures[i.e. to have alternative process of manufacturing available]
- e) Labour Economics.

A large firm employs large number of workers. Each worker is given the kind of job he is fit for.

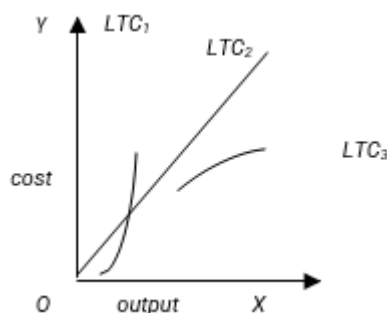
vi) Economics of transport and storage

A firm producing on large scale enjoys these economics. A big firm can have its own means of transportation to carry finished as well as raw materials from one place to another.

#### 14. Discuss about the Long run total cost (LTC) Long Run Total Cost [LTC]

According to Liebhafsky, “the long run total cost of production is the least possible cost of producing

Long run total cost is always less than or equal to short- run total cost, but it is never more than short- run total cost. LTC represents the least cost of different quantities of output. Therefore, it is tangent to any given point, on short- run total cost. In the following figure, three different types of LTC curves are shown:



LTC<sub>1</sub> - has drawn on the assumption that as output is increased, cost at first rises at diminishing rate at increasing rate.

LTC<sub>2</sub> - has been drawn on the assumption that as output increases output is followed by rise in cost at constant rate.

LTC<sub>3</sub> – has been drawn on the assumption that as output increases, cost rises at diminishing rate.

Long run cost curve always being from the point of origin while short – run cost curve being from any point on OY axis. It means that all costs in long run being variable when quantity of output is zero, total costs are also reduced to zero.

#### 15. Explain the Break even points in terms of physical units. BEP in term physical units i.e, volume of outputs.

The BEP is the number of unit of the commodity that should be sold to earn enough revenue just to cover all the expenses of production. The revenue realized all costs, both fixed and variable. The firm does not earn any profit, nor does it incur any loss. It is the meeting point of total revenue and total cost curve of the firm.

The BEP is illustrated by means of a schedule followed by a diagram:

<b>Output In units</b>	<b>Total Revenue Price Rs.4/per unit</b>	<b>Total fixedcost Rs.</b>	<b>Total variable cost Rs.</b>	<b>Totalcost Rs.</b>
0	0	300	0	300
100	400	300	300	600
200	800	300	600	900
300	1200	300	900	1200
400	1600	300	1200	1500
500	2000	300	1500	1800
600	2400	300	1800	2100

From the table, it is understood that when the output is zero the firm incurs only fixed cost under total cost. When the output is 100, the total cost is Rs. [TFC+ TCV]. The total revenue at that level of output is Rs. 400. That means, the firm incurs a loss of Rs. 200. Similarly, when the output is 200 the firm incurs a loss of Rs. 100/- At the level of output of 300units, total revenue is equal to total cost [Rs. 1,200].

**Part - A****1. How price is determined under perfect competition?**

Perfect competition is the extreme of perfection on the nature of competition while monopoly is the other extreme where there will not be any competition at all in production and selling by rival firms. There are two different extremes can be conceived only in theory and not in the practical world. The market forms will be really between the two extremes.

**2. What are the different types of Monopoly?**

- i. Private and Public Monopolies
- ii. Pure Monopoly
- iii. Simple Monopoly
- iv. Discriminating Monopoly

**3. When price discrimination is profitable?**

It is possible under the following conditions:

- i. Nature of Commodity
- ii. Distance of two markets
- iii. Ignorance of the consumers
- iv. Government regulation
- v. Geographical discrimination
- vi. Difference in elasticity of demand
- vii. Artificial difference between goods

**4. What is Oligopoly?**

There is no general theory of oligopoly. There are variety of models based no different behavioral assumptions. These are Cournot's model, Edge worth's model, Bertrand's model, Chamberlin's model, Paul Sweeny's model Price Leadership, Ben mol's Scale Revenue Maximization model.

**5. What are the essential conditions for implementation?**

- i. Nature of commodity
- ii. Distance of two markets
- iii. Ignorance of the consumers
- iv. Government regulation
- v. Geographical discrimination

## Part - B

### 6. Mention the nature of demand and cost in Monopolistic competition.

**i. Demand Curve:** Under monopolistic competition due to product differentiation, a firm faces a downward sloping demand curve. It is highly elastic with in a relevant range of prices at which he can sell any amount of the product. The reason is that if a producer raises the price of the product, some of his customers will stop buying his product and will shift to his rival firm who has not changed his price.

**ii. Cost Curve:** Under monopolistic competition, Average Cost (AC), Average Variable Cost (AVC), Marginal Cost (MC) are also of U – shape, Selling Cost is the special feature of imperfect competition. Basically selling costs are incurred on advertising of product.

### 7. Explain about different types of Discriminating Monopoly.

#### Types of Discriminating Monopoly

**i. Personal Price Discrimination:** The charging of different price from different customers for the same product on the basis of their ability to pay. Rich will be charged more and poor will have to pay less. This is possible in specialized personal services of doctors and lawyers. Doctor charges different fees for the same treatment from rich and poor patients.

**ii. Place of Geographical Price Discrimination:** The monopolist charges different prices in different markets for the same product. [i.e. in different regions/localities]. The locality in which his market is situated will be the criterion in fixing up the price i.e., whether the shop is located in an aristocratic locality or in a slum.

**iii. Trade or Use Discrimination:** The monopolist will charge different prices for different types of uses of the same commodity. Eg: electricity charges are higher for domestic consumption and lower for agricultural and bulk consumption.

### 8. Explain how price is determined in monopolistic competition

#### Price Determination in Monopolistic Competition

Price-output determination under monopolistic competition is governed by the cost and revenue curves of the firm.



The average revenue curve of the firm under monopolistic competition will be a sloping down curve, the slope being neither too steep nor too flat. It will not be flat or parallel straight line because the firm may not have very elastic demand for its product. The product is not homogeneous but slightly different from that of other firms. The firm cannot sell unlimited quantities at the established price as the products of other firms are close substitutes, if not perfect substitutes.

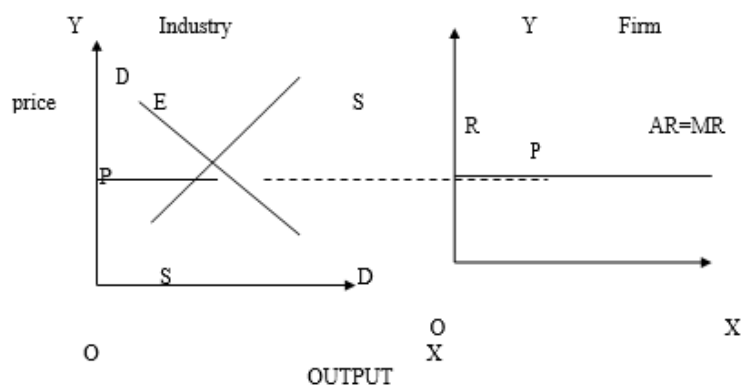
**9. Why the price indeterminate under oligopoly?**

The reasons for indeterminate price under oligopoly are:

- a. Conflicting behaviour.
- b. Indeterminate demand curve.
- c. Profit maximization is not the only motive.
- d. Different institution arrangements.
- e. Oligopolistic interdependence.
- f. Oligopolistic interdependence.
- g. Price rigidity non-price competition.
- h. Existence of non-profit motives.
- i. Conflicting attitudes of firms.

**10. Explain equilibrium price of firm and industry.**

**Equilibrium price of firm and industry:** Price under perfect competition are determined by industry and each firm will have to follow this price. It can be shown with the help of the diagram:



In the first figure, demand curve DD cuts the industry supply curve SS at point E. Thus, E is the equilibrium point which determines OP as a equilibrium price. The second figure reflects the firms demand curve. The firm will have to sell all its output at OP price. The firm cannot increase or decrease its price as it is determined by industry. It is so because under perfect competition firm is a price taker and not a price maker.



## Part - C

### 11. Discuss Monopoly power.

Monopoly power is ensured due to many factors. Let us discuss how the producer gets monopolistic power or control.

- i. Power given by the Government: Monopoly power to produce a commodity or service can be given by the government through its statutes. Public sector undertaking, corporations or any control of the existing industry by a single agency get the monopoly power granted by the Act of Parliament or Legislature.
- ii. Legal power: partial monopoly through “Trade Mark”, “Patent Rights”, “Copyright”, etc. is enjoyed by the producers or trader as they are protected by legal rights.
- iii. Combinations: combinations of different firms producing the same commodity will result in single control. Trusts, cartels, syndicates, etc. will come to have monopoly power.
- iv. Bias of the Consumer: The bias and laziness or ignorance of the consumers may give some monopolistic privilege to the producer. But those are not monopoly in the real sense of the term.
- v. Technical power: The firm may have control over raw material exclusively and it will be producing a commodity on monopolistic basis. Technical knowledge, superior and special know-how, scientific secrets or formula may enable traders to produce a commodity which may not have close substitute.

### 12. Explain Kinked demand:

The kinked demand curve hypothesis of price rigidity is based on the following assumptions:

1. There are few firms in the oligopolistic market.
2. The product produced by one firm is a close substitute for the other firms.
3. The product is of the same quality. There is no product differentiation.
4. No advertising expenditures.
5. There is an established or prevailing market price for the product at which all the sellers are satisfied
6. Each seller’s attitude on the attitude of his rivals.
7. Any attempt on the part of a seller to push up his sales by reducing the price of his product will be counteracted by other sellers who will follow his move.
8. If he raises the price others will not follow him; rather they will stick to the prevailing price and cater to the customers, leaving the price-raising seller behind.
9. The marginal cost curve passes through the dotted portion of the marginal revenue curve so that changes in marginal cost do not affect output and price.

### 13. When the price discrimination is possible?

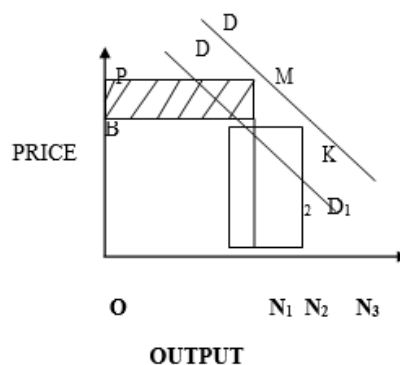
It is possible under the following conditions:

1. Nature of commodity: The nature of commodity is such that there is no possibility of transference from one market to the other
2. Distance of two markets: It is possible when the two markets are separated by large distance or tariff barriers, so that it is not possible to transfer goods from a cheaper market to dearer markets.
3. Ignorance of the consumers: it is possible that when the consumers are ignorant about price discrimination, they are not aware that in one part of the market prices are lower than in the other part.
4. Government regulation: Price discrimination occurs when the government rules and regulations permit. For example, according to rules, electricity rates railways charges, etc. Hence, it is possible because of legal sanction.
5. Geographical discrimination: The monopolist may discriminate between home and foreign buyers by selling at lower price in the foreign market than in the domestic market, i.e. on a account of geographical situation
6. Difference in elasticity of demand: A commodity may have different elasticity of demand in different markets. Thus, the market can be separated on the basis of its elasticity of demand.
7. Artificial difference between goods: A monopolist may create artificial differences by presenting the same commodity under different names and labels, one for the rich buyers and the other for the ordinary customers.

#### 14. Discuss group equilibrium in monopolistic competition.

Group Equilibrium in Monopolistic Competition.

- Demand and cost curves of all the firms are identical.
- No firm can influence the price and output decisions of its rivals. The group equilibrium can be shown with the help of a diagram



In the figure, DD1 is the group demand curve and CC is the cost curve. Every firm would like to fix up OP price because at this price the difference between price and cost is the maximum and producer gets supernormal profit equal to PBMT. The other firms will be attracted to enter the market demand, will be shared by a large number of firms. In this situation, demand curve will shift downwards and the new demand curve will be DP2. The number of firms in the market will continue increasing till the new demand curve DD2 is

tangent to the cost curve. At this point, the firm will be earning only normal profit and this will be the equilibrium position of the firm. Thus, under monopolistic competition, OB is the equilibrium price and ON is the equilibrium output.

### 15. Explain the degrees of price discrimination.

#### Degrees of Price discrimination:

Prof. A.C. Pigou has distinguished between three types of price discrimination on the basis of the degree or extent of price discrimination. they are:

- i. **Price discrimination of first degree:** Under this, the producer exploits the consumer to the maximum possible extent by asking him to pay the maximum he is prepared to pay rather than go without the commodity. This means, that the monopolist will not allow any consumer's surplus for the buyer. This type of price discrimination is called perfect discrimination. Here, the seller has to deal individually with each buyer and he is able to strike the price without consumer's surplus on the basis of his demand curve. In case of first degree price discrimination, a seller charges a price equal to what the consumer is willing to pay.
- ii. **Price discrimination of second degree:** In this, buyers are divided into different groups and from different groups a different price is charged which is the lowest demand price of that group. This type of price discrimination would occur if each individual buyer had a perfectly inelastic demand curve for good below and above a certain price. In this case, those who are prepared to pay more will get consumer's surplus while the poorest will not get any consumer's surplus. This is adopted by railway companies.
- iii. **Price discrimination of third degree:** This is said to exist when the seller divides his buyers into two or more than two sub-markets and from each group a different price is charged. The price charged in each sub-market depends on the output sold in that sub-market along with demand conditions of that sub- market. In the real world, it is third degree price discrimination which exists.

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## Unit 1

# Principles Of Management

### 1. What is Management?

Management is art of getting things done through others. Management is basically concerned with the performance of planning, organising, directing, coordinating and controlling, which is the main function of management.

Definition of management

Management is art of getting things done through people.

-Mary Parker Follet

Management is what a manager does

-Louis Allen

### 2. What are the different levels of management?

- Top level
- Middle level
- Lower level

### 3. What do you mean by administration?

Administration is concerned with laying down suitable policies for the whole concern where as management will simply execute there. Administrator are the owners of the business. Managers on the other hand are the salaried employees of the concern.

### 4. What are the advantages and disadvantages of MBO?

#### Advantages of MBO:

1. It promotes better communication relationship between the superior and a subordinate
2. It gives the Subordinate an opportunity to fix his own targets in consultation with his superior. This he will do by considering his own potential. The subordinate knows precisely what he is expected to do.
3. As the subordinate have the freedom to determine their own targets, they feel motivated and also Show keen interest in their attainment.
4. The periodic Review of the subordinate's performance enables him to know whether he is proceeding in the right direction.

**Disadvantages of MBO:**

- a. The superior and his subordinate may have to meet several times for the sake of setting the objectives mutually.
- b. Periodic review of the subordinate's performance involves lot of time and also paperwork.
- c. MBO has not much to do with the lower levels of Management

**5. Explain the difference between administration and management.**

<b>Administration</b>	<b>Management</b>
It is higher level functions.	It is lower level functions.
It refers to the owner of the organization.	It refers to the employees.
Administration is concerned with decision making.	Management is concerned with execution of decision.
It acts through the management.	It acts through the organization.
Administration lays down broad policies and principles for guidance.	Management executes therepolicies into practice.

**6. Explain the various levels of management?**

There are three levels of management is commonly found in any organization.

They are:

- ❖ Top management
- ❖ Middle management
- ❖ Lower management

- **Top level management**

- Who have the most of the authority.
- Ultimately are responsible for full organization.
- Vice president, president, managing director, chairman etc., are the top level management.
- They only formulate the goals and policies of the companies.
- They only formulate the budget.
- They only decide to appoint top executives.

- **Middle level Management:**

- Middle level managers are department heads, project leader, second level managers, plant managers or division managers etc.,
- They monitor and control who report to them.
- Implement overall organization plans helps to achieve goals as expected.
- To train and motivate the lower level employees.
- They implement the changes and strategies of top managers.

- **Lower-level management:**

- They are the directly responsible for the work of operating employees.
- To train and develop the workers.
- To assign jobs to workers.
- To order and instruct the workers.
- To report about workers, how they works to middle level managers

## 7. What are the various roles of a manager?

### **Roles of manager:**

- Interpersonal roles
- Informational roles
- Decisional roles

- **Interpersonal roles**

- Figure head role:** In this role a manager performs symbolic duties required by the status of his office. His activities include to greet the visitors attends the employee family functions.
- Leader:** Responsible for the motivation and activation of subordinates Responsible for staffing, training and associated duties.
- Liaison:** It describes manager's relationship with the outsiders A manager maintains smooth relation with other organization governments industry groups etc.

- **Informational roles:**

- Monitor:** A manager scans the environment and collect internal and external information.
- Disseminator:** Manager distributes the information to his subordinates in order to achieve organisational objectives.
- Spokes person:** Transmits the information's to outside of the organization.

- **Decision role**

- Entrepreneur:** Initiates and supervise design of organisational improvement projects.

- b. **Disturbance handler:** Responsible for corrective action when organization faces on expected problems.
- c. **Resource allocator:** Manager responsible to allocation of human, monetary and material resources.
- d. **Negotiator:** As a manager bargains with suppliers, dealers, trade union, agents etc.

#### 8. Explain the functions of management:

- **Planning:** Planning in simple, is looming ahead. It is the process of preparing for the future. Effective planning leads to efficient management. Effective planning provides answers to the questions such as, what to do? When to do? How to do? Who is to do?
- **Organising:** Organising establishes harmonious relationship among all workers of an organization by providing them with suitable authority and responsibility.
- **Staffing:** Staffing process involves selecting candidates for positions, fixing salary, training and developing them for effective organizational functions. The manager performs the duties of job analysis, job description etc.
- **Directing:** Directing involves activities such as guiding, supervising, communicating and motivating the subordinates in their jobs. Motivation, leadership, and communication are three important sub functions of directing.
- **Controlling:** Controlling deals the checking and verifying the activities against the pre.determined standards. It is the process of ensuring that the actual activities confirm to the planned activities.

#### 9. Explain nature/features/ characteristics of management:

- **Management is multi.disciplinary in nature:** Management is an inter disciplinary study. It draws ideas and concepts from various disciplines such as, economics, statistics, mathematics, psychology, sociology, anthropology etc.
- **Management is a continuous process:** Management is a process function or activity. This process continuous till the objectives set by administration are actually achieved.
- **Management is a universal activity:** Management is not applicable to business understanding only. It is applicable to political, social, religions and educational institutions also. Management is necessary when group effort is required.
- **Management is a group activity:** Management comes into existence only when there is a group activity towards a common with group efforts and not individual efforts.
- **Management is intangible:** It cannot be seen with the eyes. It is evidenced only by the quality of the organization and the result i.e profit increased productivity etc.

#### 10. Discuss the 14 principles of management given by henry fayal?

The Henry Fayol's fourteen principles of management are:

- **Division of work:** Work should be divided in a proper way with reference to the available time in a general worker on the same job and the manager on the same duty acquire ability sureness and accuracy which increase their output.

- a. **Authority and responsibility: Authority:** It is the power given to a person to get work from his subordinate.
- b. **Responsibility:** It is the kind and amount of work expected from a man by his superior.

- **Discipline:** Discipline is essential for the smooth running of organisation. To fayol discipline will result from good leadership at all levels of the organization ideas and concepts from a number of disciplines making it a multi.disciplinary subject.
- **Unity of command:** An employee must receive orders and instructions from one supervisor only. Multiple command will cause conflicts and confusions.
- **Unity of direction:** It signifies each group of activities having the same objectives with one head and one plan. All the group should coordinate and work together to achieve the common goal.
- **Subordination of individual interest to general interest:** Every employee is working in an organisation and his interest is to earn money to meet his personal needs. The general interest of organisation is the development and the progress of the organization. The employee should give importance first to the general interest then his individual interest. It will lead to effective management of the organization.
- **Remuneration of personnel:** Remuneration should be fair for both the employees and employers. The wage payment systems should satisfy the employees.
- **Centralization and decentralization:** The organization is centralized when the power is concentrated with one person. If the power is fully distributed to the subordinates, the organization is fully decentralization. For effective management of people decentralization is necessary. It helps to take a quick decision on all important problems.
- **Scalar chain:** Scalar chain principle states that instruction and orders should be sent from the top management to the bottom management.
- **Order:** There are two types of order material order and social order
  - i. Material order: A place for everything and everything in its place.
  - ii. Social order: A place for every one and every one in there place.
- **Equity:** Equity refers to the treatment of employees equally, equal treatment of the employees helps to achieve organisational goals.
- **Stability of staff:** A high employee turnover rate is not good for the efficient functioning of any organization.
- **Initiative:** It is concerned with thinking and execution of a plan. When employee come forward with new ideas, they must be encouraged by the superiors.
- **Esprit de corps:** This means Union is strength. In organization, employees should be harmony and unity. It improves the employee morale.

## **11. Explain the Importance of management:**

- 1. **Attainment of group goals:** Achievements of objectives of business depends upon various factors that management theory gives the direction to the achievement of goals.
- 2. **Effective functioning of business:** Ability, understanding, communicating, motivating, coordinating and supervision are some of the factors responsible for the effective functioning of business. Management is a vital tool to help for effective functioning of business.



3. **Resource development:** The resource of any enterprises may be identified and developed by the management. Generally, the resource are men, money, material and machines.
4. **Management controls the organisation:** Management controls the activities of enterprises. A control process is used to eliminate the unnecessary activities.
5. **Sound organizational structure:** It clearly defines the authority and responsibility of relationship. Sound organization structure helps to take corrective action wherever and whenever necessary.
6. **Motivation:** Motivation is a vital tool to achieve organisational goal. A proper motivating the workers increase the speed of performance of a work. Motivation is in the form of money or nonmonetary incentives.
7. **Communication:** Communication is a important role for effective management. Effective communication leads to efficient management.
8. **Coordination:** All the activities of enterprises are department wise, management coordinates the activities of different departments to attain the objectives of the organization.
9. **Decision making:** There are a few members of decision taken by the management every day. Management guides the managers to take a corrective decision.

## 12. Explain the important elements of Scientific management:

The concept of scientific management was introduced by F.W. Taylor. He also called as father of scientific management.

### Definition of scientific management:

Scientific management is concerned with knowing exactly what you want men to do and then see it that they do it in the best and cheapest way.

-F W Taylor

### Elements of scientific management by Taylor:

- **Separation of planning and doing:** The planning should be left to the supervisor and the worker should only emphasize on operational work.
- **Functional foremanship:** The Taylor evolved a concept of functional foremanship based on specialization functions. In this system eight functional foreman were involved to direct and control the activities of the workers.

1. Route clerk, 2. Instruction card clerk, 3. Time and cost clerk, 4. Shop disciplinarians, 5. Gang boss, 6. Speed boss, 7. Repair boss, 8. Inspector.

- **Job Analysis (or) Work study:**

Work study may be defined as the systematic, objectives and critical examination of all factors governing the efficiency of any specified activity in order to obtain effect improvement.

This can be determined by

1. Method study
2. Motion study
3. Time study
4. Fatigue study

- **Standardization:** Standardization should be maintained in respect of instruments, tools, period of work, amount of work, working conditions, cost of production etc. these things should be fixed in advance.
- **Scientific selection and training:** Taylor suggested that workers should be selected on scientific basis taking into account their education, work, experience, physical strength etc. A worker should be given work, for which he physically and technically most suitable proper emphasis should also be given on the training of workers.
- **Financial incentives:** It can motivate the workers to put up their maximum efforts. Taylor has suggested that wages should be based on individual performance and not on the position which he occupies.
- **Economy:** Scientific management enhances profit and economy. The economy and profit can be achieved by making the resources more productive as well as by eliminating the wastage.
- **Mental Revaluation:** Scientific management is based on cooperation between management and workers. Cooperation enhances the effective managerial activities. Mutual conflict should be replaced by mutual cooperation which is beneficial to both.

### **13. Explain the nature management:**

**Nature of management:**

- **Management is multidisciplinary in nature:** Management is an inter disciplinary study. It draws ideas and concepts from various disciplines such as, economics, statistics, mathematics, psychology, sociology, anthropology etc.
- **Management is a continuous process:** Management is a process function or activity. This process continuous till the objectives set by administration are actually achieved.
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- **Management is intangible:** It cannot be seen with the eyes. It is evidenced only by the quality of the organization and the result i.e profit increased productivity etc.

### **14. Is management is art or science. Explain briefly.**

- **Introduction:** Management as an art or science or a combination of both, let's see the words 'SCIENCE' and 'ART'. A science can be referred to as knowledge about the structure and behavior of the natural and physical world, based on facts that you can

prove. This can be done through experiments. Hence, predictions can be made from such experiments. ART on the other hand can be seen as a skillful way of doing things.

- **Management as an Art:** Art refers to the way of doing specific things; it indicates how an object can be achieved. In the words of George R. Terry, “Art is bringing about of a desired result through the application of skill.” Art is, thus, skilful application of knowledge which entirely depends on the inherent capacity of a person which comes from within a person and is learned from practice and experience. In this sense, management is certainly an art as a manager uses his skill, knowledge and experience in solving various problems, both complicated and non-complicated that arise in the working of his enterprise successful. In the words of Ernest Dale, “Management is considered as an art rather than science mainly because managerial skill is a personnel possession and is intuitive.”
- **Management as a Science:** Science may be described as a systematized body of knowledge based on proper findings and exact principles and is capable of verification. It is a reservoir of fundamental truths and its findings apply safely in all the situations. In this sense, management is a science as it has also developed some systematized knowledge. Like other sciences, management has also developed certain principles, laws, generalization, which are universal in nature and are applicable wherever the efforts of the people are to be coordinated. But management is not as exact science as other physical sciences like physic, chemistry, biology, astronomy etc. The main reason for the inexactness of science of management is that it deals with the people and it is very difficult to predict their behavior accurately. In this way, management falls in the area of ‘social sciences’. Thus, it is a social science.
- **Conclusion- Management is an Art and Science Both:** From the above study, we conclude that management is an art and science both. According to American Society of Mechanical Engineers. “Management is the art and science of preparing, organizing and directing human efforts to control the forces and utilize the material of nature for the benefit of men.

### 15. Describe the merits and demerits of F.W.Taylor’s Scientific management?

#### Merits:

- It eliminates the hit or miss approach
- It prescribes standard time for each work. This prevents go slow tactics.
- It provides for standardization of tools, methods, working conditions, etc. This promotes efficiency
- It enables efficient workers to earn more

#### Demerits:

- There is a feeling among workers that Scientific Management forces them to work to their maximum capacity and this will have an adverse effect on their health.
- As everything is standardized, the workers do not have any scope for showing initiative.
- The scheme of functional foremanship separates planning from doing and this has also come to be criticized.

## Unit 2

### 1. Define planning:

“Planning is the process of deciding in advance what is to be done, who is to do it, how it is to be done and when it is to be done”

-killen

### 2. Define policy:

“General statement or understanding which guide or channel thinking in decision making“

-Koontzetal

### 3. Explain the various types of planning.

#### Types of planning:

- Based on time period
- Based on scope
- Based on focus

#### ➤ Based on time period

**i. Short term planning:** Planning is for a period of up to one year. Short term planning is undertaken by the lower level management to achieve short term goals. It relates to purchase of raw materials, training of employees, production planning etc.

**ii. Medium term planning:** Plans are prepared for a period of more than one year and up to five years. Medium term plans are prepared by the middle level management. It relates to development of new products, entry into new markets, better publicity etc.

**iii. Long term planning:** Plans are prepared for a period of more than five years. The long term plans are prepared by the top level management. It relates to achieving market leadership, becoming a technology leader, building strong image and reputation etc.

#### ➤ Based on scope:

**i. Corporate planning:** Corporate plans are prepared considering the resources of the organization and its environment. They are prepared by the top level management.

**ii. Divisional planning:** It relates to particular division or department. The division head prepares the divisional plan. Divisional plans are prepared on the basis of corporate plans.

**iii. Sectional planning:** It refers to detailed plan for a particular unit relating to day to day operations. The unit manager are responsible for preparing sectional plans. Sectional plans are specific in nature and are prepared to achieve divisional planning.

➤ **Based on focus:**

**i. Strategic planning:** Strategic plans take into account of the strength and weakness of a firm considering the external environment. Strategic plans covers the entire firm. It is undertaken by the top management and covers a long period of time.

**ii. Operational planning:** Operational planning are prepared for carrying out routine day to day activities of the organisation. They are based on strategic plans of the organization. Operational plans are focused on internal environment of the firm.

**iii. Tactical planning:** It is also known as intermediate planning. Strategic planning determines what an organization would be in the future. Tactical planning involves the measures to take it there.

**4. Define policies. Mention the characteristics of a sound policy:**

“General statement or understanding which guide or channel thinking in decision making “

-Koontzetal

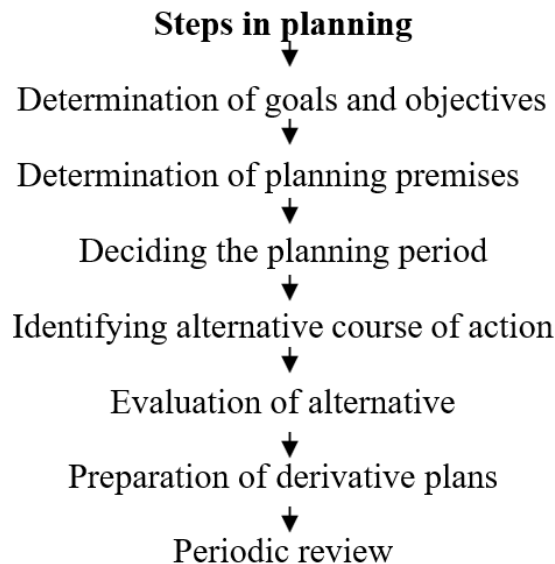
**Features or characteristics of sound policies:**

- a. Polices should be based on objectives.
- b. It should contribute towards achievements of objectives.
- c. Should be ethical in nature.
- d. A sound policy should be clear and explicit.
- e. Polices should flexible in nature.
- f. They should be general guides to thinking and action.
- g. Polices should be regularly reviewed according to the changing requirements.
- h. Polices should be Explicit and written. They should be communicated to all concerned.
- i. They should be prepared considering the resources and environment of the firm.
- j. Should provide for Consistency in business activities.

**5. Discuss the various steps involved in the process of planning?**

Planning steps is carried out based on needs of the organization

The following are the steps of the planning in general:



- ❖ **Determination of goals and objectives:** The first step is determining the goals or objectives for the entire organization. Goals can be set to make use of opportunities or to solve a problem.
- ❖ **Determination of planning premises:** Planning premises refers to assumption made about environment factors it comprises of two components.

They are.

- a. Internal premises
- b. External premises

**a. Internal premises:** Internal premises are assumptions made about the internal environmental factors such as suppliers, employees etc.

**b. External premises:** External premises are assumptions made about the external environment such as Legal environment, political environment, technological environment etc.

- ❖ **Deciding the planning period:** Third step is to decide the planning period. Operational planning focus on the short term, and while strategic planning focuses on the long term.
- ❖ **Identifying alternative course of action:** This would provide more flexible to management to deciding a course of action.
- ❖ **Evaluation of alternative:** The benefits and drawbacks of each alternatives has to be analyzed. It should be verified whether the organization has the resources to carry out the alternatives. Alternative have to be evaluated taking into account the objectives set.
- ❖ **Choice of an alternative:** The alternative which can help in efficient achievement of objectives should be chosen managers have to be very careful in this step it is because choice of a wrong alternative will lead to failure.

- ❖ **Preparation of derivative plans:** The plans developed for the various levels down the organization are called derivative plans. The plan set for the organization has to be broken down into departmental plans unit plans and individual plans.
- ❖ **Periodic review:** Periodic review have to be conducted sometimes the planning premises might changed. Then the plans have to be revised accordingly. Periodic reviews helps to take the required corrective action.

## 6. Explain the importance of planning:

### Importance of planning:

- i. Primacy of planning:** Planning proceeds all other management functions. Planning is required to decide the types of organization structure, employees required the leadership style and motivators to be used etc.
- ii. To offset uncertainty and change:** Planning helps to reduce the ill effects of uncertainty. Organization need to face continuous change. Planning helps organization to adopt to change.
- iii. To focus attention on objectives:** Planning helps to focus attention on objectives. It enables managers to realize the goals of the organization.
- iv. To helps in other functions of management:** Planning makes the process of coordination control etc. An effective plan reduces the tension on other functions of management.
- v. To increase organizational effectiveness:** Planning aids in increasing organizational effectiveness. It enables the firm to use opportunities and achive its objectives.
- vi. Better control:** Planning is the basis for control planning helps an organization to have effective control over its operations. Plans and goals serve as targets against which performance can be measured.

## 7. Explain various types of policies:

### Types Of Polices:

- 1. Formulated policies:** Formulated policy is the policy which is originated by the top level managers, and therefore, flows down the levels of management. It is also known as originated policy. The top level managers lays down the policy which serves as the guide for the managers at lower levels of the organisation while formulating for their departments. These policies help the delegation of authority and retain overall control.
- 2. Appeared policy:** It is a policy formulated on the request or appeal of lower level managers. The subordinates may make a request for policy to deal with an existing problem which is not covered by the formulated policy.

**3. Imposed policy:** It is a policy which is imposed by some external force like government, trade union or trade association. Such policies are formed by complying the force which cannot be avoided.

**4. Written policies:** Written policies are formal and explicit declarations in writing. They are very clear and clearly reveal the intention of the management. They are definite and cannot be interpreted otherwise.

**5. Implied policies:** Sometimes policies may not be clearly stated, and the actions of managers at the higher levels provide guidelines for actions at lower levels. Therefore implied policies are oral understandings that can be inferred from the decisions of managers. Such policies may change with the change of person.



## Unit 3

### Part - A

#### 1. Define organisation.

According to Koontz and O'Donnell, "it is a grouping of activities necessary to attain enterprise objectives and the assignment of each grouping to a manner with necessary to supervise it".

#### 2. What is departmentalisation?

Departmentation is the means of dividing a large and monolithic functional organisation into smaller, flexible administrative units.

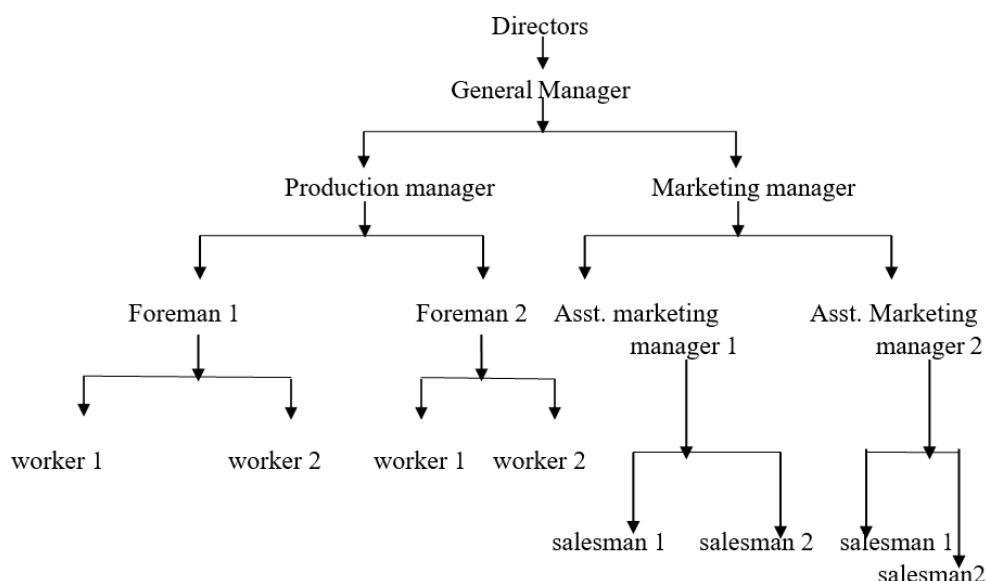
#### 3. What is span of control?

The span of control is the number and range of direct, habitual communication contacts between the chief executive of an enterprise and his principal fellow-officers.

#### 4. What is informal organisation?

Informal organisation arises from the social interaction among the members they are formed to satisfy members need for belongingness and pursuit of special interests like games, cultural activities, hobbies etc.

#### 5. Explain organisation structure in the flow chart format?



## Part- B

### 6. Explain the need/importance of departmentalisation.

- i. To take advantage of specialisation.
- ii. Provides for smooth functioning of the organisation.
- iii. Helps in co-ordination.
- iv. Ensures effective control.
- v. Enables organisational flexibility.
- vi. Facilitate objective appraisal of performance.
- vii. Enables growth and expansion.
- viii. Creates accountability.
- ix. Improves managerial abilities such as communication, co-ordination and control.
- x. Improves decision making skills.
- xi. Provides autonomy and improves job satisfaction and motivation.

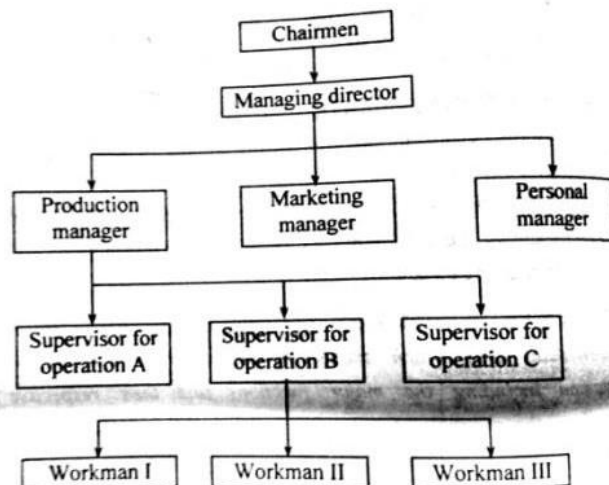
### 7. What is organisation chart? Explain its types:

An organisation chart is a diagrammatical form which shows the important aspects of an organisation including the major functions and their respective relationships, the channels of supervision and the relative authority of each employee who is incharge of each respective functions.

#### Types of organisation chart:

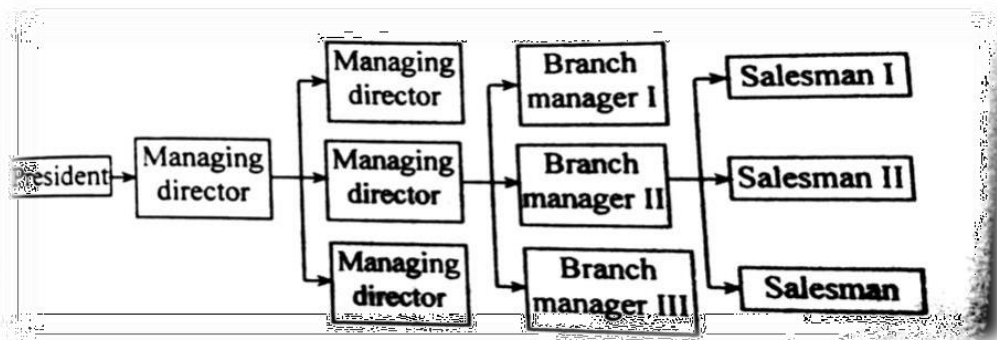
- i. Vertical chart
- ii. Horizontal chart
- iii. Circular chart

#### • Vertical Chart:



It shows the organisation structure in the form of a pyramid, the lines of communication flow from top level to the bottom in vertical lines. This vertical chart is in the form of a graph. In this chart highest position is placed at the top after that the next highest. It is also known as top down chart.

- **Horizontal Chart:**



The chart in which the line of command are flowing horizontally instead of vertical is known as horizontal chart. There is no much difference between vertical and horizontal chart. In this chart highest position is shown at the extreme left and lowest position at extreme right.

- **Circular Chart:**



In this chart, the position of the top executive is shown in the center of the chart. The subordinates of these top executives are shown in all direction outward from the center. Such a chart is a better representation of the personnel relationships as it eliminates the status implications.

**8. Distinguish between formal and informal organizations.**

Basic of distinction	Formal organisation	Informal organisation
<b>Origin</b>	They are created by conscious managerial decisions.	Arise spontaneously within the organisation.
<b>Objective</b>	To achieve the objectives of the organisation	To satisfy the need for affiliation and bonding among members.
<b>Structure</b>	There is well defined structure of authority responsibility and reporting relationship.	There is no definite structure. Structures can keep changing.
<b>Chain of command</b>	The chain of command is officially determined. Authority flows step by step in a downward direction.	There is no fixed chain of command.
<b>Communication</b>	Has to follow formal channels.	There is no fixed pattern of communication. It does not depend on formal channels.
<b>Stability</b>	Stable in nature.	It lacks stability.
<b>Flexibility</b>	Rigid in nature.	Highly flexible in nature.
<b>Leadership</b>	Leaders are designated by the management.	Leaders are chosen by the members of the group.
<b>Goals</b>	Goals are related to business such as profitability, productivity, customer satisfaction etc.	Goals may related to affiliation, friendship, esteem etc.

**9. Explain the types of departmentalization.**

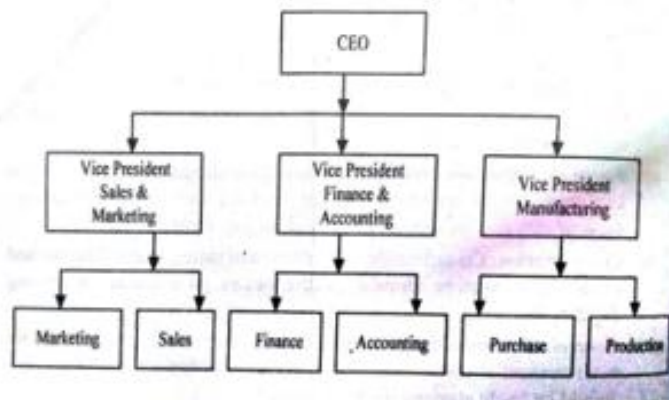
The following are the types of departmentation:

- Departmentation by function

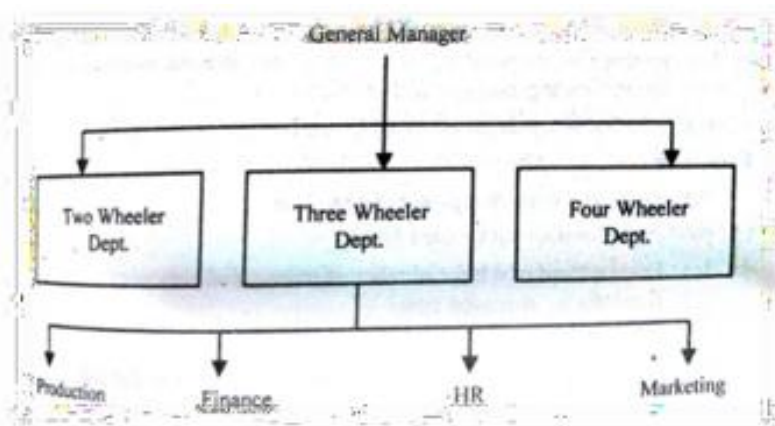
- Departmentation by product
- Departmentation by process
- Departmentation by territory
- Departmentation by customer

**Departmentation by function:**

It is most widely used basis for departmentation. In this type of departmentation, each major function constitutes a separate department. For eg. Production department, purchase department, marketing department sales department, accounts department in a manufacturing concern.



**Product departmentation:**

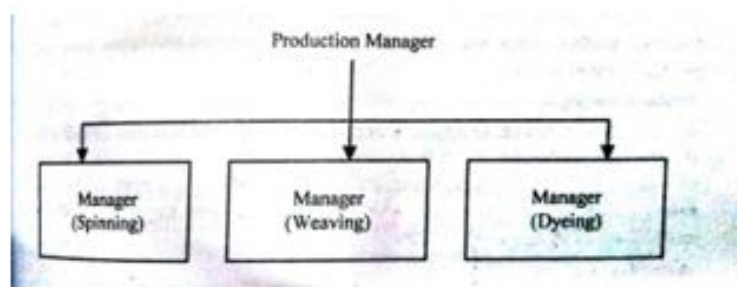


This type of departmentation is suitable for large organisation producing a variety of products or services. For eg organisations such as wipro (food products, lighting, cosmetics, software, hardware, BPO, furniture). For each major product, a seprate department is created and a manager is designated as incharge. The manager has to take care of all functions relating to the product.

**Departmentation by Process:**

In this method of departmentation, activities are grouped on the basis of production processes involved. It is generally applied to manufacturing organisations and process industries such as textiles, sugar and chemicals .

For eg: in a textile mill there can be a ginning department, spinning department, weaving department and dyeing department.



**Departmentation by territorial:**

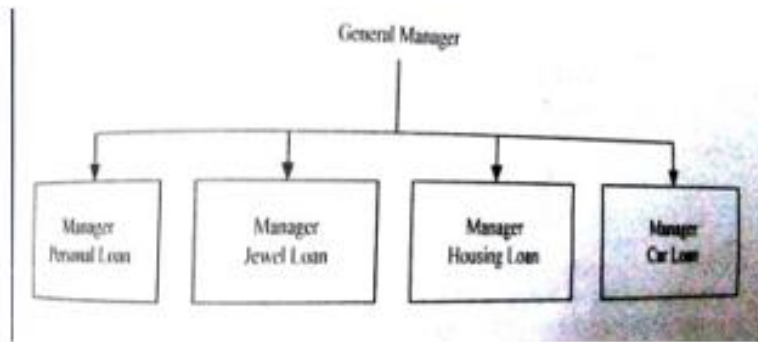
Territorial departmentation is adopted by organisations which operate in different geographical areas. Since customer preference, competition, government rules and regulations etc. are not the same separate departments are created area or territory wise.

For eg: An organisation can create departments for the northzone, southzone, east zone, west zone.



**Customer departmentation:**

Customer departmentation is followed by organisations which produce and sell a variety of goods to satisfy needs of different customer groups. Departments are created based on customer groups.



## 10. Explain the concept of span of management in detail.

### Span of Management

#### Definition:

The **Span of Management** refers to the number of subordinates who can be managed efficiently by a superior. Simply, the manager having the group of subordinates who report him directly is called as the span of management.

The Span of Management has two implications:

- Influences the complexities of the individual manager's job
- Determine the shape or configuration of the Organization

The span of management is related to the horizontal levels of the organization structure. There is a wide and a narrow span of management. With the wider span, there will be less hierarchical levels, and thus, the organizational structure would be flatter. Whereas, with the narrow span, the hierarchical levels increases, hence the organizational structure would be tall.

Both these organizational structures have their advantages and the disadvantages.

But however the tall organizational structure imposes more challenges:

- Since the span is narrow, which means less number of subordinates under one superior, requires more managers to be employed in the organization. Thus, it would be very expensive in terms of the salaries to be paid to each senior.
- With more levels in the hierarchy, the communication suffers drastically. It takes a lot of time to reach the appropriate points, and hence the actions get delayed.
- Lack of coordination and control because the operating staff is far away from the top management.

The major advantage of using this structure is that the cross communication gets facilitated, i.e., operative staff communicating with the top management. Also, the chance of promotion increases with the availability of several job positions.

In the case of a flatter organizational structure, where the span is wide leads to a more complex supervisory relationship between the manager and the subordinate. It will be very difficult for a superior to manage a large number of subordinates at a time and also may not listen to all efficiently.

However, the benefit of using the wider span of management is that the number of managers gets reduced in the hierarchy, and thus, the expense in terms of remuneration is saved. Also, the subordinates feel relaxed and develop their independent spirits in a free work environment, where the strict supervision is absent.

## **Part- C**

### **11. Explain the various types of organisation.**

They are two types of organisation

- Formal organisation and
- Informal organisation

#### **Formal Organisation:**

- Formal organisation refers to the structure of well-defined jobs, each bearing a definite measure of authority, responsibility and accountability.
- The structure is consciously designed to enable the people of the organisation to work together for accomplishing common objectives.
- Thus, formal organisation is more or less an arbitrary structure to which the individual must adjust. It tells him to do certain things in a specified manner, to obey orders from designated individuals and to co-operate with others. Co-ordination also proceeds according to a prescribed pattern in the formal organisation structure.
- Formal organisation is a system of consciously co-ordination of activities or forces of two or more persons. Thus, formal organisation is created through the co-ordination of efforts of various individuals. The formal organisation facilitates the determination of objectives and policies.
- The degree of success of these objectives will be determined by the capacities and attitudes of the people within the organisation. Formal organisation is the official hierarchy as it appears on paper. It is the basic and official version of the organisation.

(i) It is deliberately impersonal;

(ii) It is based on ideal relationship; and

(iii) It is based on rabble to hypothesis of the nature of man.



- These characteristics have also been the main points of criticism of formal organisation. Firstly, as it is deliberately impersonal, emotions and sentiments of individuals are ignored in determining the interactions, communication and accountability. But human beings cannot live without social interactions and that is why they develop informal relations.
- Secondly, it is based on ideal relationships. Human beings are thought to be rational and economic beings. Further, it is assumed that there should be no unofficial channel of communication. But it is very difficult to find, such ideal relationships in actual life.
- Lastly, it is based on the rabble hypothesis of the nature of man. It is assumed that there will be the same kind of reaction if human beings are punished or rewarded. But the individuals are not always motivated by the rewards and punishments in the same manner.
- Formal organization is deliberately constructed to achieve some goals. They are not changeable with the passage of time. This is another point of criticism put forward by its critics. The rules and regulations of this may be too rigid that is becomes difficult to achieve the goals.
- Moreover, former organisation does not consider the goals of the individuals. Because of these reasons formal organisation usually gives birth to informal organisations which cannot be separated from it. As a matter of fact, there is a close relationship between the formal and informal organisation.

### **Informal Organisation:**

- Informal organisation refers to the relationship between people in the organisation based on personal attitudes, emotions, prejudices like-dislikes, etc. These relations are not developed according to procedures and regulations laid down in the formal organisation structure.
- Generally, large formal groups give rise to small informal or social groups. These groups may be based on some taste, language, culture or any other factor. These groups are not preplanned, but they develop automatically within the organisation.
- Informal organisations are small groups and these groups can overlap because a person may be member of more than one group. A manager can not eliminate the informal organisations because he does not create them. Many a time informal organisations came into being to support and supplement the formal organisation. For instance, informal communication is very fast and it can break the barriers in the formal communication.
- Informal organisation may also create problems for the management by spreading rumors and resisting the introduction of change. That is why some people do not favour the recognition of informal groups by the management.
- Both formal and informal relations are indispensable components of any organisation. It is true that while laying out the organisational plan management can only develop the formal structure of relationships. But it does not imply that informal relations cannot work alongside, the formal ones.
- In-fact, informal organisation is a valuable component of the formal organisation and in some of the vital gaps in the latter. Therefore, management should not consider informal organisation hostile to formal organisation. Every manager should try to gain an intelligent insight into the informal group interactions to be able to influence the organisational behaviour.

- Management can use informal organisations for communicating its programmes and policies to the workers and know their reactions. It can also make their use for introducing change in the organisation without much resistance on the part of the workers.
- In short, it can be concluded that management should encourage the informal organisations for keeping harmonious relations in the organisation and for achieving the organisational objectives.

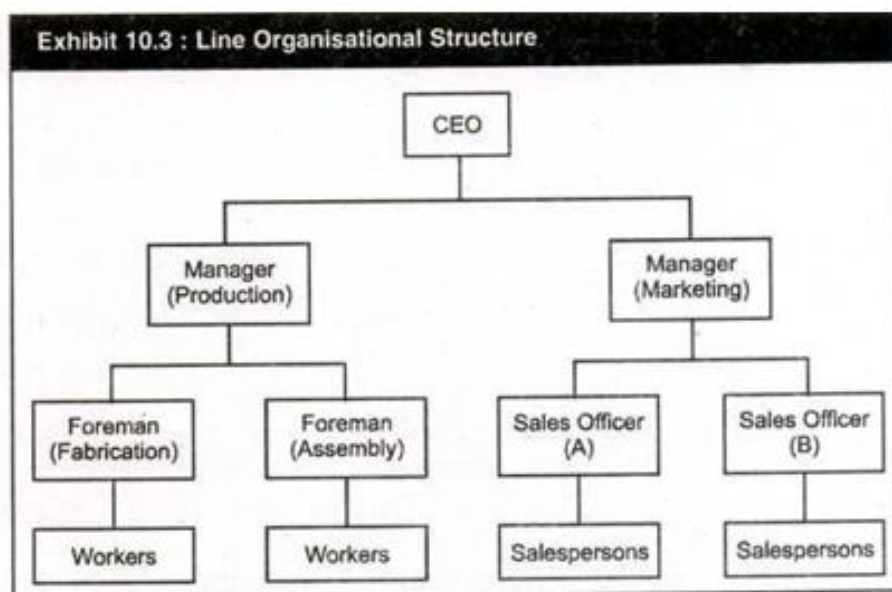
## 12. Explain the organisational structure in detail.

All managers must bear that there are two organisations they must deal with-one formal and the other informal. organisational structures are categorised as

- Line organisational structure.
- Line and staff organisational structure.
- Divisional organisational structure.
- Project organisational structure.
- Matrix organisational structure
- Functional Authority Organisational Structure

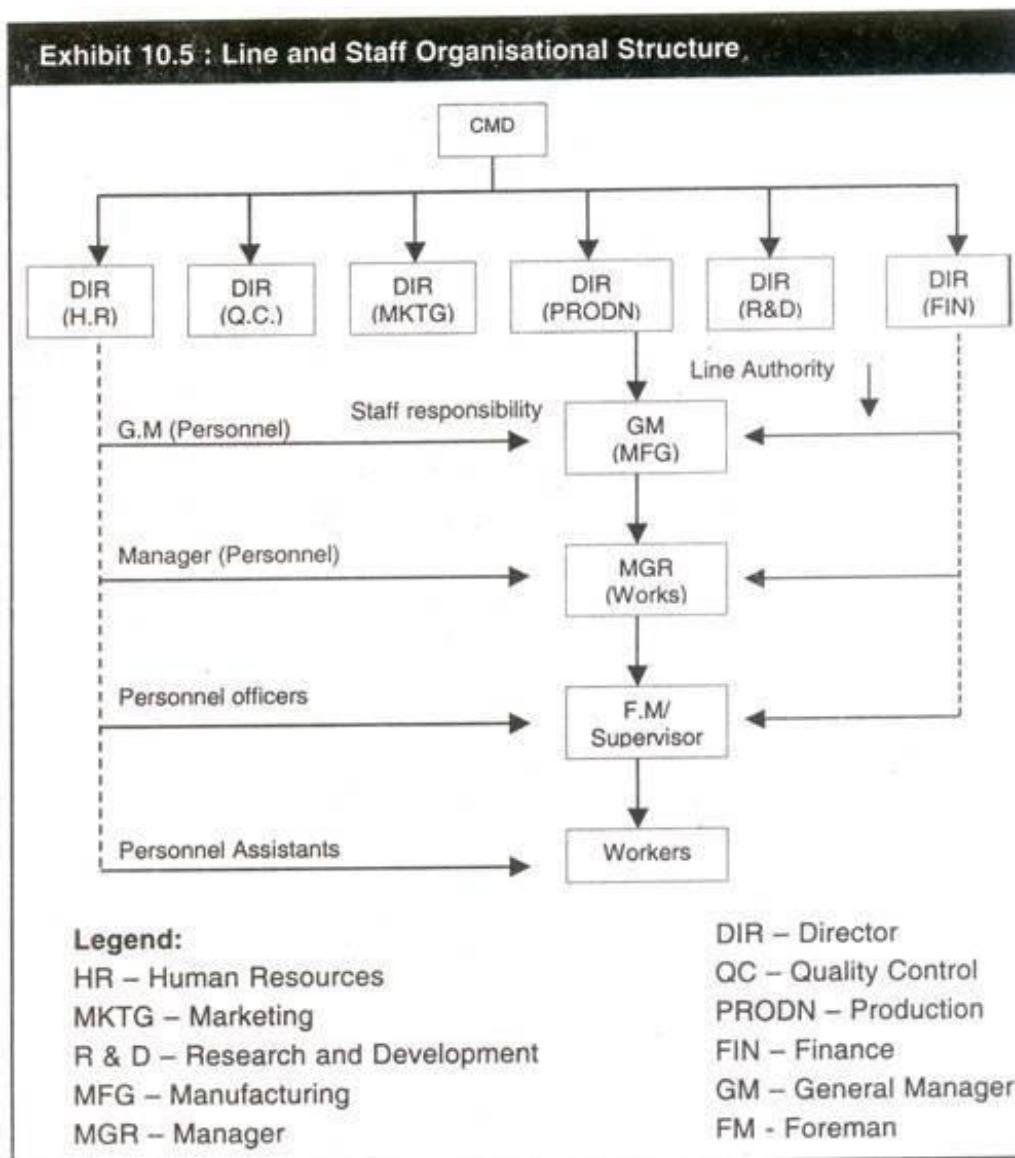
### Line Organisational Structure:

A line organisation has only direct, vertical relationships between different levels in the firm. There are only line departments-departments directly involved in accomplishing the primary goal of the organisation. For example, in a typical firm, line departments include production and marketing. In a line organisation authority follows the chain of command.



### Line and Staff Organisational Structure:

Most large organisations belong to this type of organisational structure. These organisations have direct, vertical relationships between different levels and also specialists responsible for advising and assisting line managers. Such organisations have both line and staff departments. Staff departments provide line people with advice and assistance in specialized areas (for example, quality control advising production department).



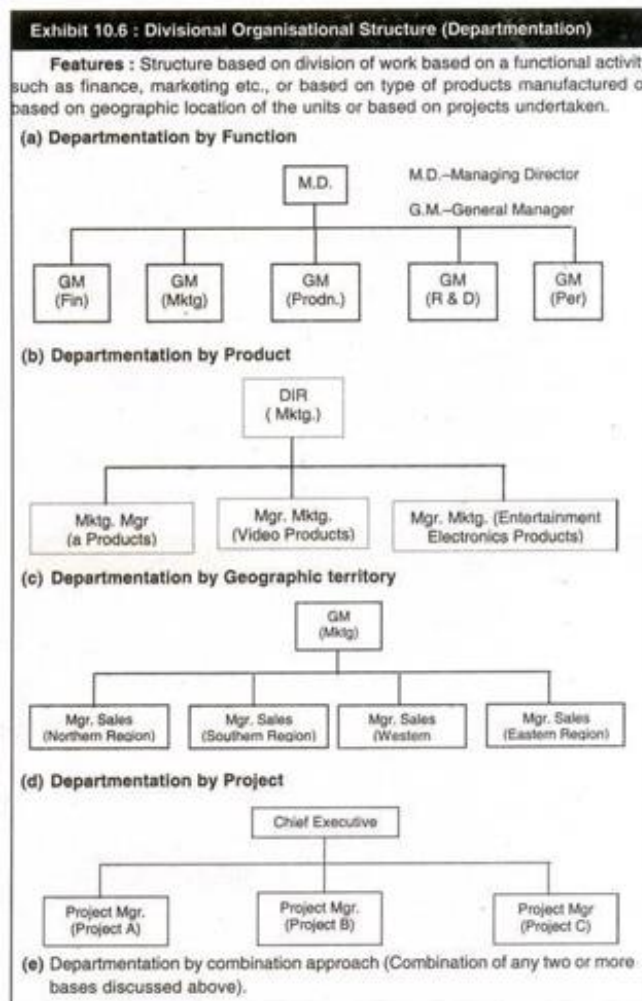
the line and staff organisational chart. The line functions are production and marketing whereas the staff functions include personnel, quality control, research and development, finance, accounting etc. The staff authority of functional authority organisational structure is replaced by staff responsibility so that the principle of unity of command is not violated.

### Divisional Organisational Structure:

In this type of structure, the organisation can have different basis on which departments are formed. They are:

- (i) Function,
- (ii) Product,
- (iii) Geographic territory,
- (iv) Project and
- (iv) Combination approach.

organisational structures formed based on the above basis of departmentation.

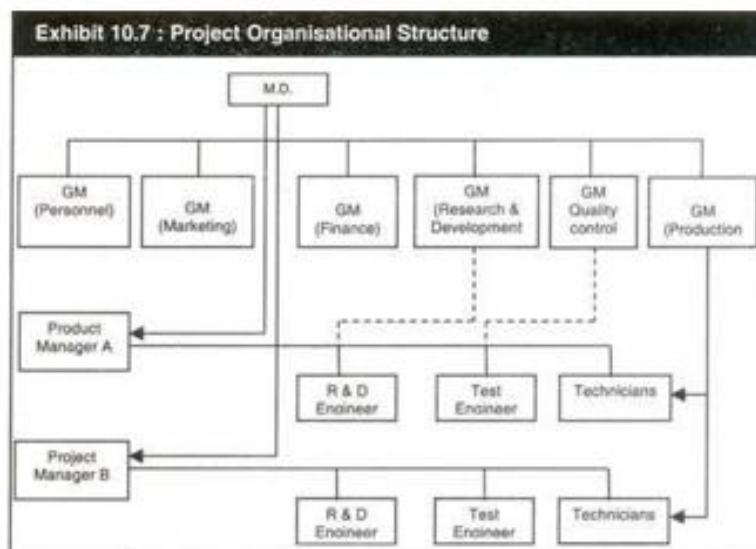


### Project Organisational Structure:

The line, line and staff and functional authority organisational structures facilitate establishment and distribution of authority for vertical coordination and control rather than horizontal relationships. In some projects (complex activity consisting of a number of interdependent and independent activities) work process may flow horizontally, diagonally, upwards and downwards. The direction of work flow depends on the distribution of talents and abilities in the organisation and the need to apply them to the problem that exists. The cope up with such situations, project organisations and matrix organisations have emerged.

A project organisation is a temporary organisation designed to achieve specific results by using teams of specialists from different functional areas in the organisation. The project team focuses all its energies, resources and results on the assigned project. Once the project has been completed, the team members from various cross functional departments may go back to their previous positions or may be assigned to a new project. Some of the examples of projects are: research and development projects, product development, construction of a new plant, housing complex, shopping complex, bridge etc.

project organisational structure.



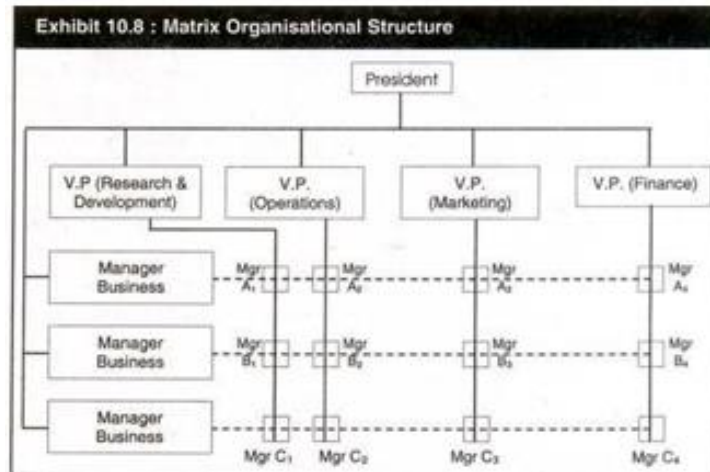
### Matrix Organisational Structure:

It is a permanent organisation designed to achieve specific results by using teams of specialists from different functional areas in the organisation.

#### Advantages:

1. Decentralised decision making.
2. Strong product/project co-ordination.

3. Improved environmental monitoring.
4. Fast response to change.
5. Flexible use of resources.
6. Efficient use of support systems.



In matrix structures, there are functional managers and product (or project or business group) managers. Functional manager are in charge of specialized resources such as production, quality control, inventories, scheduling and marketing. Product or business group managers are incharge of one or more products and are authorized to prepare product strategies or business group strategies and call on the various functional managers for the necessary resources.

The problem with this structure is the negative effects of dual authority similar to that of project organisation. The functional managers may lose some of their authority because product managers are given the budgets to purchase internal resources. In a matrix organisation, the product or business group managers and functional managers have somewhat equal power. There is possibility of conflict and frustration but the opportunity for prompt and efficient accomplishment is quite high.

### **Functional Authority Organisational Structure**

The jobs or positions in an organisation can be categorized as:

#### **(i) Line position:**

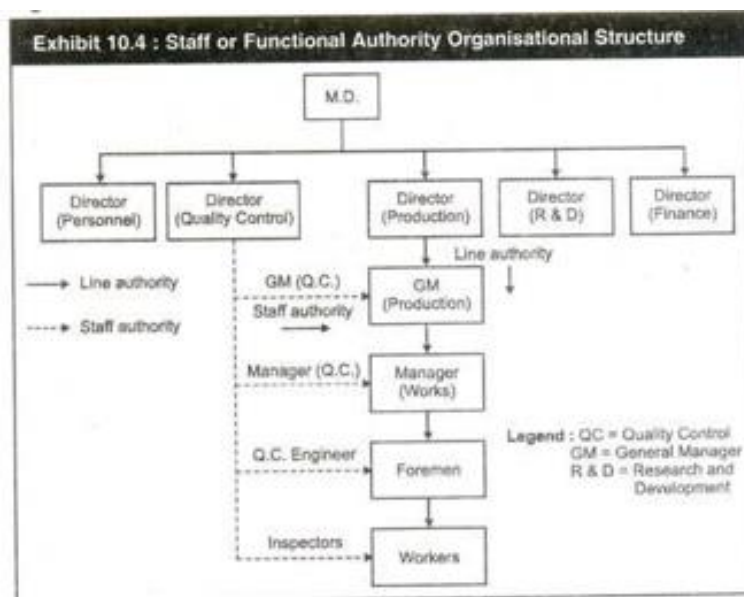
a position in the direct chain of command that is responsible for the achievement of an organisation's goals and

#### **(ii) Staff position:**

A position intended to provide expertise, advice and support for the line positions.

The line officers or managers have the direct authority (known as line authority) to be exercised by them to achieve the organisational goals. The staff officers or managers have staff authority (i.e., authority to advise the line) over the line. This is also known as functional authority.

An organisation where staff departments have authority over line personnel in narrow areas of specialization is known as functional authority organisation. A staff or functional authority organisational structure.



In the line organisation, the line managers cannot be experts in all the functions they are required to perform. But in the functional authority organisation, staff personnel who are specialists in some fields are given functional authority (The right of staff specialists to issue orders in their own names in designated areas).

The principle of unity of command is violated when functional authority exists i.e., a worker or a group of workers may have to receive instructions or orders from the line supervisor as well as the staff specialist which may result in confusion and the conflicting orders from multiple sources may lead to increased ineffectiveness. Some staff specialists may exert direct authority over the line personnel, rather than exert advice authority (for example, quality control inspector may direct the worker as well as advise in matters related to quality).

While this type of organisational structure overcomes the disadvantages of a pure line organisational structure, it has some major disadvantages:

They are: (i) the potential conflicts resulting from violation of principle of unity of command and (ii) the tendency to keep authority centralized at higher levels in the organisation.

### **13. Discuss the importance of organization:**

Importance of organization

**1. Mechanism for management in action:** organization is not only a chart. It is a mechanism for management in action. So many management actions such as direction, motivation, coordination and control help in organizing function. It also helps to manage the business firm with proper management actions

**2. Facilitate in management and operation:** organization is directly or indirectly related to well defined work, authorities, responsibilities and account-abilities Managers and other employees are benefited by appropriate functional activities. It helps in smooth and effective management operation giving effective functional activities.

**3. Effective delegation:** all level of mgmt must make the decisions. Sufficient level of authority and responsibility must be delegated to make the decisions. When the delegation of authority and responsibility is affected all level of employees can make the decisions easy. Organization helps in effective delegation.

**4. Growth and diversification:** organization clear division of work, delegation of authority and responsibility, the relationship among resources etc. these activities helps in growth and diversification function. On the other hand, sound org give the clear cut frame work to do work too

**5. Optimum use of technological resources:** org use machines, equipment and tools. With the help of org many sophisticated technologies and improved materials are used. Use of latest technologies help in efficiency improvement

**6. Use of human resource:** human resource must be properly utilized. Org help in great utilization of manpower by placing right people and right place in the basis of their qualification, experience, skill and knowledge etc. Developing employees and motivating then are most important tools to use the human resources.

**7. Flexibility:** org may be changed according to the needs of environment and changing circumstances. The org structure must be flexible that helps to adjust in external as well as internal environment.

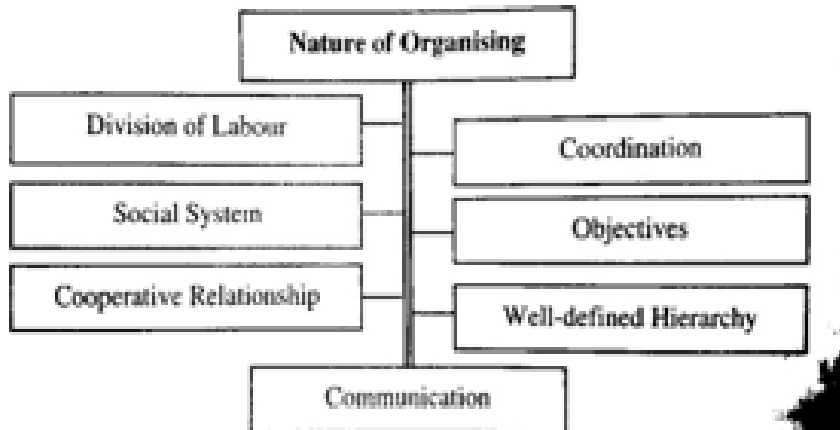
**8. Productivity increment:** when the authorities and responsibility are given to all employees they can make decision in their working level, appropriate adjustment of resources is most important management function which help to increase the productivity.

### **14. Explain the nature of organizing:**

**Definition of Organising:** According to Koontz and O'Donnell, "it is a grouping of activities necessary to attain enterprise objectives and the assignment of each grouping to a manner with necessary to supervise it".



## Nature of Organizing



**1. Division of Labour:** Division of labour leads to specialisation which increases the efficiency of individual employees. Fayol recommended that work of all kinds must be subdivided that work of all kind must be subdivided and allocated to a number of persons.

**2. Coordination:** In any organisation, different persons are assigned different functions and yet all these functions have only one aim i.e., accomplishment of the enterprise objectives. An organisation has to adopt suitable methods to ensure that there is proper coordination of the different activities performed at various work points. This implies establishment of correct and adequate relationships between:

- An employee and his work,
- One employee with another, and
- One department or sub department with another.

**3. Social System:** An organisation is a social system. Its activities are governed by social and psychological laws. People working in an organisation are influenced in their actions and behaviour by their social and psychological needs. All parts of organisational system are inter dependent. Each part influences and influenced by any other part and also in tern by the system as a whole. There are two aspect in social system

- Formal or official.
- Informal or unofficial.

The organisation social system are inter-personal and group relationships within it keep on changing, and are not static.

**4. Objectives:** Any organisation structure is bound together by the pursuit of specific and well defined objectives. In fact just as objectives cannot be accomplished without an organisation. Similarly an organisation can not exit for long without objectives and goals.

**5. Cooperative relationship:** An organisation creates co-operative relationship among various members of the group. It cannot be constituted by one person. It requires at least two or more persons. Organisation is a system which helps in creating meaningful relationship among person both vertical and horizontal.

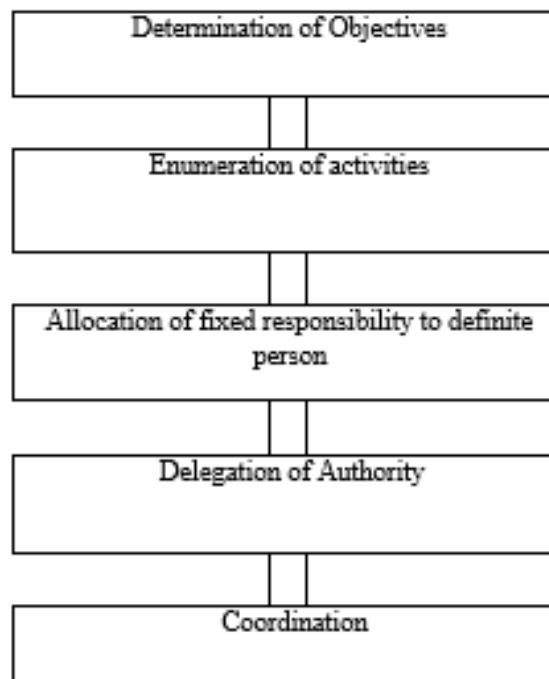
**6. Well defined hierarchy:** An organisation consists of various positions arranged in a hierarchy with well defined authority and responsibility. Hierarchy of positions defines the lines of communication and pattern of relationships.

**7. Communication:** Every organisation has its own channels and methods of communication. For success in management effective communication is vital. This is because management is concerned with working with others, and unless there is proper understanding between people, it cannot be effective. The channels of communication may be formal, informal, downward, upward, or horizontal.

**15.** Explain in detail the process of organizing.

**Process Of Organising:** The process of organizing may be described as the managerial function of organizing. It consists in making a rational division of work into groups of activities and tying together the position representing grouping of activities so as to achieve a rational, well-coordinated and orderly structure for the accomplishment of work.

The steps involved in this process are:



**i) Determination of Objectives:**

It is a first step in building up the organization. It will assist deciding as to why the proposed organization is to be set up and therefore, what will be the nature of the work to be accomplished through the organization.

**ii) Enumeration of activities:**

Then the total job is subdivided into essential activities, e.g., the work of an industrial concern may be divided into the following major functions:

- a. Purchasing
- b. Production
- c. Financing
- d. Personnel
- e. Sales
- f. Export promotion etc.,

**iii) Grouping activities:**

Then closely related and similar activities are grouped into divisions and departments and the departmental activities are further divided into sections. Different bases are adopted for the purpose of dividing and sub dividing the activities into groups. Functions like sales, production, finance etc., are made the basis of primary grouping. Secondary grouping is made on the basis of geographical areas, types of customers, equipment used, processes adopted or constituent parts of major enterprise function.

**iv) Allocation of fixed responsibility to definite persons:**

Here specific job assignments are made to different subordinates for ensuring a certainty of work performance.

**v) Delegation of Authority:**

Authority without responsibility is a dangerous thing and similarly responsibility without authority is an empty vessel. Hence, corresponding to the responsibility authority is delegated to the subordinates for enabling them to show work performance.

**vi) Coordination:**

This is necessary for the optimum performance. It is an integrating function. The performance of departments and sections are to be integrated to achieve objectives.

## Unit 4

### Part - A

#### 1. Write the meaning of Authority?

Authority is the right to command. It is the right to command others to do things and to get work done from them. It is based on the position and not on the person. Higher the position, higher the extent of authority. The superior- subordinate relationship would have no meaning without a certain form of authority.

#### 2. What is decentralization?

- Decentralisation refers to the systematic effort to delegate to the lowest levels all authority except that which can only be exercised at central points.
- Decentralisation of authority is a fundamental phase of delegation.

#### 3. Define Delegation:

According to Koontz and O's Donnell, "the entire process of delegation involves the determination of results expected, the assignment of tasks, the delegation of authority for accomplishment of these tasks, and the exaction of responsibility for their accomplishment".

#### 4. Write down the techniques of direction?

Managers use several techniques to direct their subordinates in order to get things done. These are:

- i. Delegation
- ii. Supervision
- iii. Communication
- iv. Motivation and
- v. Leadership

#### 5. What is Motivation? State its kinds:

Motivation means a process of stimulating people to action to accomplish desired goals and its kinds as follows:

- i. Positive motivation
- ii. Negative motivation
- iii. Extrinsic Motivation
- iv. Intrinsic motivation

## Part - B

### 6. Explain the concept of Motivation?

Management is the art of getting work done by the subordinates in order to attain common goals of the organization. Getting work done is a difficult task. For this purpose, the management should inspire and motivate the people for the accomplishment of organizational objectives. The force of motivation is a dynamic force setting a person into motion or action. The word motivation is derived from motive which is an active form of a desire or need, which must be satisfied. All motives are directed towards goals and the needs and desires affect or change your behavior.

#### ❖ Definition:

**Scott** defines, “Motivation means a process of stimulating people in action to accomplish desired goals”. From above definition, the following characteristics can be understand.

- Motivation is an unending process because human needs are unlimited.
- Motivation is a psychological concept, which generated within an individual. It is an inducement of inner feeling of an individual and it cannot be forced upon from outside.
- Motivation is a behavioural concept that directs human behavior towards certain goals.
- A person cannot be partially motivated because he is a self contained and inseparable unit.
- Frustrated man who fails in satisfying his basic needs cannot be further motivated until his basic needs are fulfilled.
- Motivation can be either positive or negative.
- Motivation is a complex process complementarity create because of the nature of needs and the type of behavior that is attempted to satisfy those needs..
- Motivation is system oriented. Motivation is the result of three group of factors
  - a. It influences to operate within an individual i.e., his needs, goals etc.
  - b. It influences to operate within the organization i.e., organization structure, physical facilities, nature of job etc.
  - c. It forces to operate in the external environment e.g. Culture, norms etc.
- Motivation and satisfaction are different. Motivation refers to the drive and effort to satisfy a want or goal. Satisfaction refers to the contentment experienced when a want is satisfied. It is experienced when the outcome has been achieved.

### 7. Describe Mc.Gregor’s X theory and theory Y

Prof. Douglas McGreogor has developed a set of theories on the basis of hypotheses relating to human behavior. These theories are commonly known as “Theory X” and “Theory Y”. According to MCGregor, the function of motivating people involves certain assumptions about human nature. A brief explanation of ‘X’ theory and ‘Y’ theory is given below:

### I. Theory –X:

According to MCgregor, theory X is based on the following assumptions of human nature and behavior:

- ❖ The average human dislikes to work. He will avoid work if it is possible.
- ❖ Therefore, people must be controlled, directed and threatened with punishment to make them work.
- ❖ The average human being prefers to be directed. He avoids responsibility, he has no ambition in life. He wants only job security.
- ❖ An average man is inherently self-centred and indifferent to organizational goals.
- ❖ He is resistance to change by nature.

The above assumptions are negative in nature. So, a manager must take effective steps to direct and control the activities of subordinates. Theory ‘x’ is pessimistic, static and rigid. It leads to authoritative type of management.

### II. Theory ‘Y’:

According to theory-Y, the following assumptions are made about the human nature and behavior.

- ❖ Work is as natural as play or rest. The average human being has the tendency to work.
- ❖ External control and threat of punishment are not only the means of reaching the objectives of organization. Man will have self-direction and control. By this, organizational objectives can be achieved.
- ❖ People will be committed to the objectives if they are properly rewarded.
- ❖ Under proper conditions, the average human being accepts responsibility.
- ❖ Large numbers of people are capable of solving organizational problems in an organization with high degree of imagination, ingenuity and creativity.
- ❖ Under modern industrial life, the intelligence capacity of average human being is only partially utilized.
- ❖ A worker may exhibit his efficiency even for non-monetary rewards such as participation in decision-making, increased responsibility etc.
- ❖ Theory Y represents a modern and dynamic nature of human beings. It is based on positive motivation. So, management need not apply much direction and control on the employees. If the employee’s needs are satisfied, they will be committed to the objectives of the organization. Theory Y is optimistic, dynamic and flexible.

### 8. Distinguish between Authority and Power.

Sr. No.	Power	Authority
1.	Cannot be depicted in the organization chart	Is depicted in the organization chart
2.	Can move in any direction	Moves from top to bottom

Sr. No.	Power	Authority
3.	Need not arise from a job or the position held in an organization. It may arise due to personal factors also.	Arises from a job or position held in an organization. It is dependent on the position a person holds in an organization.
4.	Not well defined. Dependent on the person wielding the power and the relationship he has with others.	Well defined. There are clear guidelines and restrictions regarding. What can be done and what cannot be done.
5.	Power can be used for serving personal needs also.	Generally authority is exercised for achieving the goals of the organization.
6.	It is the capacity to command.	It is the right to command and get things done.
7.	It can be exercised in the formal as well as informal organisation	Is exercised in the formal organisation

### 9. Explain the principles of directing.

- ❖ **Principle of Maximum individual contribution:** Success of any organization depends on the contribution of each employee. Therefore direction should motivate and obtain the willing contribution of all employees.
- ❖ **Principle of Unity of Command:** It states that a subordinate should receive orders from only one boss. He should clearly know to whom he is answerable, this will ensure accountability and control. Reporting to more than one boss will lead to confusion and frustration.
- ❖ **Principle of Managerial communication:** Continuous and clear communication is essential for effective direction. Through effective communication the superior would be able to guide and motivate his subordinates. Communication should be two way to ensure understanding.
- ❖ **Principle of Direct Supervision:** If subordinates are supervised by their boss, it would boost their morale and motivation. Direct supervision would result in better control and higher performance level.
- ❖ **Principle of Effective Leadership:** The quality of leadership influences the effectiveness of direction. If the leader provides proper counseling to his employees, he would be greatly respected. His orders and commands would be willingly obeyed.
- ❖ **Principle of Follow up:** The leader should continuously follow up the progress of his subordinates. This enables solving of problems in the initial stage itself. It would create a moral fear among subordinates and ensure good performance.

### 10. Explain the importance of motivation?

Motivation encourages employees to contribute their best efforts for achieving organizational goals. High motivation offers the following benefits:

- **Utilisation of employee potential:** If they are not motivated, employees would put in minimum efforts to survive in their jobs. Motivation stimulates employees to perform to their fullest potential. This results in better performance.
- **Improved efficiency:** Motivated employees put in their best efforts in their jobs. The firm is able to produce more and also control costs. This results in improved efficiency.
- **Optimum usage of resources:** Motivated employees make the best use of resources. They willingly put in their efforts to perform well and avoid wastages. The physical, financial and human resources are used in the best possible manner.
- **Reduced labour turnover:** Motivated employees experience higher job satisfaction. They would like to continue working in the same organization. This reduces labour turnover and also recruitment and training costs of new employees.
- **Reduced absenteeism:** An organization which has provided the right type of motivation has high attendance. Absenteeism is reduced to a great extent. This results in higher labour productivity.
- **Better industrial relations:** Higher production and productivity leads to higher profits. Employees receive higher pay and benefits. They would willingly co-operate with the management. This results in better industrial relations.
- **Attraction and retention of talent:** Firms with effective motivation systems perform better and are profitable. They provide higher benefits and keep their employees happy. This helps in retaining talented employees and attracting qualified employees to fill vacancies.
- **Better image and reputation:** High motivation results in better relations and improved success. This improves the image and reputation of the organization. Better image and reputation provides several benefits.
- **Reduced complaints and grievances:** Complaints and grievances arise mainly because needs are not satisfied. Through motivation employee needs are satisfied. Therefore complaints and grievances would be very less.
- **Strikes and lock outs avoided:** Motivation results in healthy relationship between management and workers. Management takes steps to satisfy employee needs and employees achieve organizational goals. This results in better co-operation and avoidance of strikes and lockouts.

## **Part- C**

### **11. Explain the kinds of Motivation in detail?**

**Motivation:** Motivation means the factors operating within an individual, which pushes him to act in a certain way. It is that process which induces ordinary people to do extraordinary things.

#### **Definition:**

“Motivation means a process of stimulating people to action to accomplish the desired goal”

-W.G. Scot



**Kinds of motivation:**

- **Positive motivation:** It refers to motivating employees through rewards and recognition. It is encouraging employees to perform better through financial and non financial incentives. Positive motivation results in better employee satisfaction and improved team spirit. In the long term, positive motivation gives better benefits.
- **Negative Motivation:** Negative motivation is making employees to perform on the basis of threats and fear of punishment. Employees are told that poor performance would result in unfavorable effects such as dismissal demotion or layoff. Negative motivation can be adopted if the employees are indisciplined.
- **Extrinsic Motivation:** It refers to encouraging a person to do something through external rewards. If an employee is motivated through financial and non- financial incentives or threat of punishment, it is a extrinsic motivation. Extrinsic motivator influence behavior through desire for rewards or avoiding negative outcomes.
- **Intrinsic motivation:** It is the internal desire to do an activity for its own sake without expecting any external reward. It is doing something because it is interesting, enjoyable and personally satisfying. Intrinsic motivation lies within the individual.

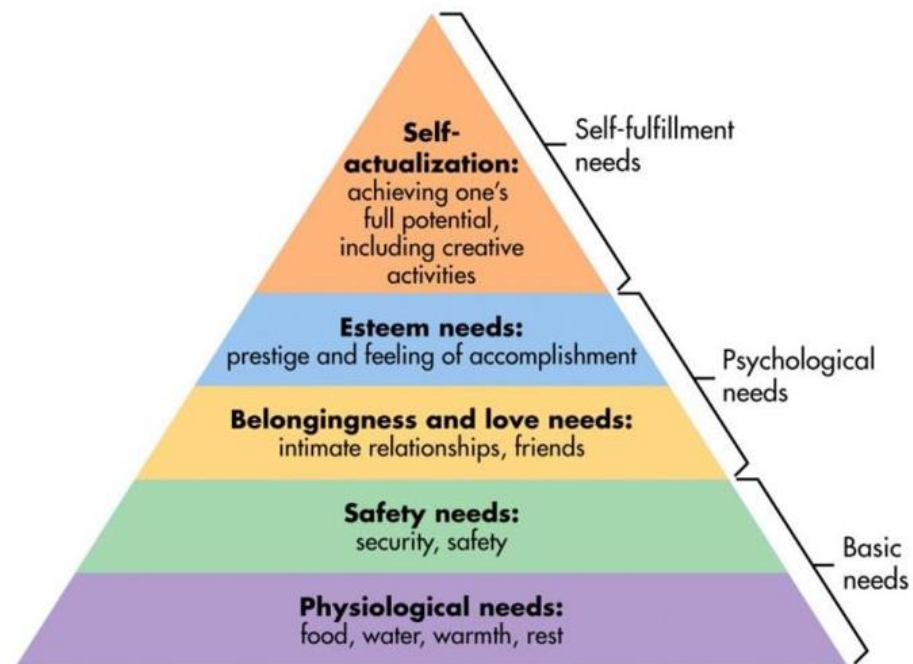
**12. Discuss Maslow's need hierarchy theory in detail? (Or) Explain the various theories of Motivation?**

Abraham Maslow is well renowned for proposing the Hierarchy of Needs Theory in 1943. This theory is a classical depiction of human motivation. This theory is based on the assumption that there is a hierarchy of five needs within each individual. The urgency of these needs varies. These five needs are as follows-

1. **Physiological needs-** These are the basic needs of air, water, food, clothing and shelter. In other words, physiological needs are the needs for basic amenities of life.
2. **Safety needs-** Safety needs include physical, environmental and emotional safety and protection. For instance- Job security, financial security, protection from animals, family security, health security, etc.
3. **Social needs-** Social needs include the need for love, affection, care, belongingness, and friendship.
4. **Esteem needs-** Esteem needs are of two types: internal esteem needs (self- respect, confidence, competence, achievement and freedom) and external esteem needs (recognition, power, status, attention and admiration).
5. **Self-actualization need-** This include the urge to become what you are capable of becoming / what you have the potential to become. It includes the need for growth and self-contentment. It also includes desire for gaining more knowledge, social- service, creativity and being aesthetic. The self- actualization needs are never fully satiable. As an individual grows psychologically, opportunities keep cropping up to continue growing.

According to Maslow, individuals are motivated by unsatisfied needs. As each of these needs is significantly satisfied, it drives and forces the next need to emerge. Maslow grouped the five needs into two categories - Higher-order needs and Lower-order needs. The physiological and the safety needs constituted the lower-order needs.

These lower-order needs are mainly satisfied externally. The social, esteem, and self-actualization needs constituted the higher-order needs. These higher-order needs are generally satisfied internally, i.e., within an individual. Thus, we can conclude that during boom period, the employees lower-order needs are significantly met.



### 13. What is Leadership? Explain its kinds?

**Meaning:** Leadership is the ability to build up confidence and zeal among people to create an urge them to be led. To be a successful leader, a manager must possess the qualities of foresight, drive, initiative, self-confidence and personal integrity. Different situations may demand different types of leadership.

**Definition:** “Leadership is the ability of a manager to induce subordinates to work with confidence and zeal.”—**Koontz and O’Donnell.**

“Leadership is the exercise of authority and making of decisions.” —**Dubin, R.**

#### **Different Kinds of Leadership:**

- i. Autocratic
- ii. Democratic
- iii. Laissez faire
- iv. Functional
- v. Institutional and
- vi. Paternalistic

**(i) Autocratic Leader:**

An autocratic leader wants his subordinates to work in the manner he wants. He tells them what they should do, where, when and how. He does not let his followers offer any suggestion. He specifies the goal, makes available the resources that he thinks are enough and sets the deadline within which the subordinates will have to complete the task. The subordinates have to report to him at regular intervals to show the progress of work. The autocratic leader thinks that his followers are incapable of making decisions.

**(ii) Democratic Leader:**

Such a style of leadership is also known as ‘participative leadership’ a democratic leader does not make unilateral or one-sided decisions. He provides scope for his followers to participate in the decision-making process. He allows his subordinates to discuss the problem and put forth their views freely. The final decision will be made based on the consensus of all. If any subordinate does anything that is opposed to the interests of the group, the other members of the group take the initiative to correct him.

**(iii) Laissez Faire Leader:**

The dictionary meaning of laissez faire is policy of non-interference. Also known as a ‘free rein leader’, a laissez faire leader gives full freedom to his followers to act. He does not lay down guidelines within which his followers have to work. He neither influences the subordinates’ decision nor does he interfere in the process of decision-making. The laissez faire leader does not exercise the formal authority of a leader.

**(iv) Functional Leader:**

A functional leader is one who is an expert in a particular field of activity. He has risen to the position of a leader by virtue of certain special skills that he possesses. He does not command any formal authority.

The functional leader will be able to offer help to his subordinates provided the subordinates approach him for certain genuine job related problems. The leader expects the subordinates to perform to his level and if the followers are not very serious about their work, he may demand performance.

**(v) Institutional Leader:**

An institutional leader is one who has become a leader by virtue of his official position in the organizational hierarchy. For example, a person appointed as the General Manager of a concern.

An institutional leader may not be an expert in his field of activity. He therefore, may not be able to provide expert guidance to his followers. But he has to secure performance from them.

**(vi) Paternalistic Leader:**

A paternalistic leader takes care of his followers in the way the head of a family takes care of the family members. He is mainly concerned with the well being of his followers and is always ready to protect them. He may provide them with all the physical amenities needed. But he will not be able to guide them to perform their job well. Thus the paternalistic leader is able to be sociable but is not able to offer intellectual help.

**14. Write down the advantage and disadvantage of decentralization?**

**Meaning:** Decentralisation can be viewed as an extension of delegation. When a part of the work is entrusted to others, it is known as delegation. Decentralisation extends to the lowest level of the organisation.

**Definition:** “Decentralisation refers to tire systematic effort to delegate to the lowest levels all authority except that which can only be exercised at central points.” —Louis A. Allen

**Advantages of Decentralisation:**

**1. Reduces the burden on top executives:**

Decentralisation relieves the top executives of the burden of performing various functions. Centralisation of authority puts the whole responsibility on the shoulders of an executive and his immediate group. This reduces the time at the disposal of top executives who should concentrate on other important managerial functions. So, the only way to lessen their burden is to decentralise the decision-making power to the subordinates.

**2. Facilitates diversification:**

Under decentralization, the diversification of products, activites and markets etc., is facilitated. A centralised enterprise with the concentration of authority at the top will find it difficult and complex to diversify its activities and start the additional lines of manufacture or distribution.

**3. To provide product and market emphasis:**

A product loses its market when new products appear in the market on account of innovations or changes in the customers demand. In such cases authority is decentralised to the regional units to render instant service taking into account the price, quality, delivery, novelty, etc.

**4. Executive Development:**

When the authority is decentralised, executives in the organisation will get the opportunity to develop their talents by taking initiative which will also make them ready for managerial positions. The growth of the company greatly depends on the talented executives.

**5. It promotes motivation:**

To quote Louis A. Allen, “Decentralisation stimulates the formation of small cohesive groups. Since local managers are given a large degree of authority and local autonomy, they tend to weld their people into closely knit integrated groups.” This improves the morale of employees as they get involved in decision-making process.

**6. Better control and supervision:**

Decentralisation ensures better control and supervision as the subordinates at the lowest levels will have the authority to make independent decisions. As a result they have thorough knowledge of every assignment under their control and are in a position to make amendments and take corrective action.

**7. Quick Decision-Making:**

Decentralisation brings decision making process closer to the scene of action. This leads to quicker decision-making of lower level since decisions do not have to be referred up through the hierarchy.

**Disadvantages of Decentralisation:**

Decentralisation can be extremely beneficial. But it can be dangerous unless it is carefully constructed and constantly monitored for the good of the company as a whole.

**Some disadvantages of decentralisation are:**

**1. Uniform policies not Followed:**

Under decentralisation, it is not possible\* to follow uniform policies and standardised procedures. Each manager will work and frame policies according to his talent.

**2. Problem of Co-Ordination:**

Decentralisation of authority creates problems of co-ordination as authority lies dispersed widely throughout the organisation.

**3. More Financial Burden:**

Decentralisation requires the employment of trained personnel to accept authority, it involves more financial burden and a small enterprise cannot afford to appoint experts in various fields.

**4. Require Qualified Personnel:**

Decentralisation becomes useless when there are no qualified and competent personnel.

## **5. Conflict:**

Decentralisation puts more pressure on divisional heads to realize profits at any cost. Often in meeting their new profit plans, bring conflicts among managers.

## **15. Write down the obstacles to delegation?**

**Barriers to Delegation of Authority:** Though delegation enhances efficiency of the organisation by dividing work amongst organisational members (according to their capabilities), it is not free from obstacles.

Various barriers to delegation can be grouped in three main headings.

- I. Barriers related to superiors or delegator,
- II. Barriers related to subordinates or delegate, and
- III. Barriers related to organisation.

***I. Barriers related to Superiors:*** Despite knowing how important it is to delegate, superiors sometimes do not delegate work to subordinates.

**This is because of the following reasons:**

### **1. Wanting to do things personally:**

Some managers do not delegate because they feel they can do the work better than others. Since ultimate responsibility is that of the delegator, they prefer doing the work themselves rather than getting it done through others. This also helps in maintaining control over the activities assigned to subordinates. The delegator enjoys doing the work and makes his importance felt in the organisation by showing his busyness in the office.

### **2. Insecurity:**

If managers feel that subordinates perform better than them, they avoid delegation. The exposure of their inabilities to take good decisions creates a feeling of insecurity and, therefore, they fear to delegate. This happens in organisations where work procedures and methods are not sound. A weak operating system usually stops the managers from revealing their shortcomings to the subordinates.

### **3. Retention of power:**

Some managers like to take responsibility, make their importance felt by everyone in the organisation and want the subordinates to come to them to get their problems solved. Their desire to retain power and dominate is a hindrance to the effective delegation process. Such managers are usually autocratic in nature. They abstain from delegation and prefer to direct people personally.

#### **4. Lack of confidence in subordinates:**

The reward for risk is return. Unless managers assume the risk of subordinates not performing well, they cannot contribute to the development of skilled managers in future. A manager who does not take risk in subordinates and lacks confidence in them will not be able to delegate effectively. Delegation is based on trust between superior and subordinates. Negative attitude towards subordinates obstructs delegation as superior lacks confidence in the ability of subordinates.

#### **5. Unwillingness to set standards of control:**

Having delegated the duties, managers remain accountable for overall performance of the work. They supervise the activities of subordinates to ensure that actual performance is in conformity with planned performance. A manager who fails to establish standards of control will not be able to effectively delegate to subordinates.

#### **6. Personal factors:**

Autocratic managers usually do not delegate to keep tight control over the activities of subordinates. Democratic leaders prefer to delegate as they believe in participation of employees in the decision-making process.

Managers usually follow past precedents in creating an environment friendly to delegation. If their managers delegate to them, they also trust their subordinates in making delegation effective. If their managers did not trust them in delegating the tasks, they also do not delegate the tasks further.

### ***II. Barriers Related to Subordinates:***

#### **Subordinates present the following barriers to effective delegation:**

##### **1. Lack of confidence:**

Some subordinates do not want to take responsibility for the fear of not being able to perform well. They lack confidence and do not want to take any risk. They prefer to depend on their bosses to make decisions.

##### **2. Fear of making mistakes:**

Some subordinates fear that if they make mistakes in carrying out the delegated responsibilities, their superiors will criticize them for unfavourable outcomes. This fear dissuades them from taking added responsibility.

##### **3. Lack of incentives:**

Motivation (through financial and non-financial incentives) makes delegation effective. Subordinates are reluctant to accept delegation in the absence of incentives.

**4. Absence of access to resources:**

If subordinates do not have access to resources (financial and non-financial) to carry out their work, they will not accept delegation of responsibilities. This happens when there is delegation of responsibility without commensurate authority.

**5. Convenience:**

Sometimes subordinates prefer the work is done by superiors rather than assuming responsibility for the same, for the sake of convenience. They simply want their bosses to make the decisions.

***III. Barriers Related to Organisation:***

**The barriers related to organisation structure are as follows:**

**1. Size of the organisation:**

A small-sized organisation will not have too many jobs to delegate to subordinates. It is, thus, not responsive to delegation of tasks.

**2. No precedent of delegation:**

Merely because organisations have not earlier been following the practice of delegation sometimes makes them continue with the practice of not delegating the jobs.

**3. Degree of centralisation or decentralisation:**

Efficient delegation is affected by the degree to which organisation distributes the decision-making power to various organisational units. A highly centralised organisation is obstructive to the process of effective delegation.



## Unit 5

### Part - A

#### 1. Define co-ordination:

To co-ordinate is to harmonize all the activities of a concern so as to facilitate its working and its success. In a well coordinated enterprise, each department or division work in harmony with others and is fully informed of its role in the organization. - Henry Fayol

#### 2. Differentiate control from planning:

Planning is the primary function of all businesses. It is the first step on deciding what to do, how, where and when a specific work has to be done and complete a task successfully. Planning is important to process a project and get the expected result in an allocated time and budget.

Controlling is the main goal and responsibilities of all management in any enterprises. It is used to compare the factual performance with the standard of the company, and to make sure that the activities are performed according to the plan.

#### 3. write a note on techniques of coordination:

Louis Allen has suggested the following three techniques of coordination:

- **Balancing:** balancing means ensuring sufficiency of an aspect to support or counterbalance the other.
- **Timing:** timing refers to the task of matching the time schedules of different activities so that they support and reinforce one another.
- **Integrating:** integrating refers to the task of unifying diverse interest in order to achieve the common goal.

#### 4. what is meant by pooled interdependence:

It refers to the relationship between the departments in an enterprise that are relatively independent of one another and make contribution individually. for example in a Departmental Store, there are number of departments each having its own identity and is making contribution to the growth of the store individually.

#### 5. what is meant by BEP analysis:

The break even point is that point at which total cost are equal to total revenue. At break even level of sales, there is neither profit nor loss for the business.

## **Part - B**

### **1. Explain the characteristics of control.**

#### **Nature or characteristics of the control function:**

The following are the basic characteristics of the control function:

- **It is backward looking:** controlling involves comparing the actual performance with the targets. This request checking of even after these have taken place. Control is, thus, a backward looking activity.
- **It gives meaning to planning:** planning will lose its significance in the absence of control. It is only control that indicates the extent to which the plan has been successfully implemented. In the absence of control, it will not be possible to know whether the target has been achieved.
- **It involves appraisal for evaluation-** the very nature of the control function is to make an appraisal or evaluation of the actual performance-production, sales, etc. Deviation from the target can be detected only if actual performance is assessed.
- **It is a pervasive function-** control, like planning, is a pervasive function, that is performed at all levels of management-top, middle and lower levels.
- **It is forward looking to-**by comparing actual performance with the expected level of performance, deviations can be detected. Once the cause for the deviation are found out, corrective measures must be employed to prevent the occurrence of the flaws in future. Thus, control provide the necessary safeguards for future uncertainties.
- **It is a continuous process-**as long as there is planning there will be a control. As planning is an endless activity, control should also be endless.

### **2. How is control important in management:**

#### **Benefits or importance of control:**

- It ensures a attainment of enterprise objective-while planning helps to work systematically, control helps to ascertain whether the fruits of labour have been realised.
- It highlights quality of plans-control brings out the positive and negative aspects of the various plans of the enterprise. If there is any deficiency in Planning, steps may be taken to improve the quality of plans.
- Potential successful implementation of plans: It is only control that ensures whether the plans of the enterprise are been properly implemented. It points out the bottlenecks in the implementation of Plans and also suggest remedial measures.
- It ensures that employees work with commitment- control requires the employees at all levels to perform their duties as planned in order to attain the target within the stipulated time. In the absence of control, there may be a tendency to go slow.
- It provides scope for delegation-in every department of the enterprise, target attainment gets the focus in view of the control function. To attain the target, the department has had have to assign work to their subordinates and also give them the requisite authority

to carry out their task. Thus, control give scope for delegation of authority by a superior to his subordinates.

- It facilitates coordination- the work of every employee influences and is influenced by the work of others. What is, therefore required is a coordinated effort. Control requires the employees to Integrate their efforts and work as a team in order to achieve that targets.
- It promotes efficiency-by fixing the deadline for the accomplishment of targets, control ensures that the resources of the enterprise, namely, men, machines, materials and money are put to optimum use. This leads to higher efficiency.

### **3. Give some examples of opportunities and threats to a business:**

**Opportunity** is a favourable condition that enables a business to strengthen its position. For example, if the products of a business are always received well, it will certainly provide scope for its to emerge as a powerful organisation.

#### **Opportunities:**

- a. What are the good chances facing the business now?
- b. What are the interesting trends?

Examples of opportunities are

- Changes in technology and market conditions.
- Changes in government policies and regulations.
- Changes in lifestyles.
- Local and global events.

A **Threat** is an unfavourable condition that makes business activities risky. A monopolist does not usually face risk of any kind. In the case of consumer goods market, competition processor major threats for the firms.

#### **Threats**

1. What obstacles does our business face?
2. What are the competitors doing?
3. Are the specifications for our products changing?
4. Is changing Technology a potential threat?
5. Do we have bad debts or cash flow problems?

### **4. Explain the characteristics of co-ordination:**

#### **Characteristics of coordination:**

1. The need for coordination arises due to interdependence- when an individual or a department perform certain activities that do not affect anyone, there is no need for co-ordination at all. But in a business organisation, the activities of the different

departments are interrelated and interdependent. Therefore, these need to be properly coordinated.

2. It aims at attaining the common goal- although the different departments in an enterprise work according to their own agenda, it is only through co-ordination that the overall enterprise objective is achieved.
3. It is the duty of every manager- every manager has the duty to secure co-ordination. For this he should not just mind activities of his department alone. He should find out the needs of those departments whose activities his department influences. For example, the production manager should co-ordinate the activities office department with those of the sales department. He must Arrange to produce to fulfil the needs of the sales department.
4. It does not arise spontaneously- co-ordination of enterprise activities does not happen spontaneously. All the individuals and departments will have to work together to secure coordination. In other words, it requires conscious efforts.
5. It may be performed by specialist appointed for the purpose- Normally the task of coordination is performed by the departmental managers themselves with the help of their subordinates. But in a large concern the task of securing coordination may be entrusted to a specialist or to a group of experts. Sometimes, separate Department also be created for the purpose.
6. It is an ongoing activity- co-ordination is not something that is required only at a particular point of time. The different activities of the enterprise needed to be coordinated as and when they are performed. As long as there is planning and execution, there will be coordination.

#### **5. State the importance of MIS to a business:**

**MIS** is an organised a system that provides the management with the relevant information at the most appropriate time and with the highest level of accuracy.

The information provided by **MIS** is vital for making certain important decisions in business pertaining to inventory level, wage payment and so on.

**MIS** relies mainly on computer that can process Complex information with maximum speed and accuracy.

#### **Importance of MIS:**

1. It does not rely only on manpower. MIS is a man-machine system.
2. It access data in a raw form, process it and provides Useful information.
3. It provides information at the right time and in the manner in which it is desired so that vital decisions can be made without any delay.
4. Several functional areas of management like accounting, production and marketing rely on MIS these days.
5. With MIS the task of feeding, processing, storing, retrieving and dissemination of information has become easy. It can also be done with maximum speed and accuracy.

## Part - C

### 1. What are the problems faced in securing co- ordination?

#### Problems in coordination

1. **Multiplicity of activities**-the problem of coordination increases with the increase in the number of activities performed in an enterprise. The larger the number of activities the greater will be the problem of co-ordination.
2. **Large number of employees**- securing coordination in a small organisation, where only a few people are employed, is quite easy. On the other hand in a big industrial establishment, where hundreds of employees are working, coordination is bound to pose problems.
3. **Division of work**- Division of work, no doubt, offers the benefit of specialisation. But a serious drawback of division of work is that it will post problems of coordination among the persons who perform the different operations. Such a problem will not arise if one person alone performs a certain task.
4. **Interdependence**- coordination will not pose any problem in case an individual or a group or a department is able to work independently without being influenced by others. But, in practice, the activities of any person will depend on those of others. for example, workers X may be able to do his work only after worker Y has perform his task. Thus, there is interdependence and this leads to the problem of coordination.
5. **Clash of interest**- If the organisation has employees who are all duty conscious, co-ordination will not pose any serious problem. But normally in any organisation there are people who always think and work for their personal interest and are not really bothered about the organisational interest. When such a clash of interest occurs, coordination becomes a tough job.
6. **Difference in perceptions, values and beliefs**-coordination becomes difficult also due to the fact that the perception, values and beliefs of the employee in an organisation or not the same. For example if one worker is prepared to work overtime to complete the target and another is not prepared for overtime work, co-ordination becomes difficult. Likewise, there may be a worker who may be willing to continue work although he has attained his target for the day where as another person may not be willing.
7. **Lack of cooperative spirit**-cooperation among the staff provides the very basis for co-ordination. In an organisation where there is lack of cooperative spirit among the employees, securing coordination is sure to pose problems.
8. **Uncontrollable factors**-several uncontrollable factors, such as availability of credit, raw materials and powers, changes in government policies, unpredictable market condition Etc., also pose problems in performing the coordination function. For example, the sales department might have prepared its sales plan with lot of enthusiasm. But the production department will be able to produce only if the necessary raw materials are made available to it at the right time. Likewise, the purchase department will be able to make purchases only if the Finance Department is in a position to provide Finance.

## **2. Discuss the various methods of securing effective coordination**

### **Methods of securing effective coordination:**

**1. Planning:** provision for Easy co-ordination can be made in the planning stage itself. After determining the overall objective of the enterprise, the basic plan is prepared to realise the overall objective in a systematic manner. The basic plan should also indicate what is expected of each department like Production department, sales department etc., and at what stage. In other words, the periodic targets to be achieved by the different departments should be carefully planned so that co-ordination can be secured easily.

**2. Rules and procedures:** Rules and procedures can be established for the purpose of achieving easy coordination. Rules explain the do's and don'ts for the employees. There is always a punishment for the violation of Rules. The employees, therefore will have to follow the rules of the organisation and avoid anything that is disallowed. In the same way procedures prescribe the manner or method of doing any work. Once procedures are established, the employees have no option but to adhere to the same.

**3. Hierarchy:** The organisational hierarchy can also be used to solve the problems pertaining to coordination. For example, if there is a conflict between the foreman and the workers, the production managers make intervene and set things right. It must be remembered here that coordination is required even within a department. In the same way, if there is any problem confronting the production and the sales departments at the same time the general manager can intervene and find a solution. Thus, it is possible to solve co-ordination problems by using one's official position.

**4. Effective communication:** coordination can be effectively secured through a proper system of communication. For example, the sales department may be in constant touch with the production department to ensure that the sales orders can be executed as promised. In the same way, the production department may be in constant touch with the staff of the purchase department to ensure that there is no delay in obtaining the necessary raw materials. All these contacts can be established over telephone or through intercom if the organisation has such a facility.

It must be remembered that the informal communication or 'grapevine' can also play a vital role in the matter of securing effective coordination. Sometimes what cannot be achieved formally can be achieved informally. The manager can, instead of using his position to get things done by a subordinate, use his personal relationship to secure the required performance.

**5. Leadership:** The manager, who is supposed to have leadership qualities, knows how to induce subordinate to get things done. He knows the subordinate whose performance is due. If he ignores it, coordination will suffer. A leader knows the person from whom he has to demand performance and those who would do their work even without his directions. If the enterprise has an able leader, it will not face any problems of coordination.

**6. Supervision:** When a supervisor undertakes supervision, he will become aware of the work related problems of his subordinates. If a solution is not found to any such problem, it will affect performance. Lack of performance will post problems of co-ordination. The supervisor therefore, has to strive to find the solution if it is within the scope of his authority or refer the same to his own superior for an early solution.

**7. Liaison officers:** With the increase in the scale of operation the problem of coordination is bound to increase. In such a case it is difficult to secure effective coordination with the existing arrangement. It may, therefore, be necessary to appoint one or more Liaison officers o undertake the task of co-ordination. These liaison persons are expected to be in constant touch with the different interacting departments and solve any issues.

To perform Liaison roll between different departments, however, it is not an easy task. The liaison officer may often receive contradicting versions from the various departments and may not be in a position to perform his role effectively.

**8. Task force:** Where the liaison officers are not able to secure effective co-ordination due to various reasons, the management may decide to set up a task force, consisting of representatives from the interacting departments command to look after the co-ordination function.

**9. Co-ordination department:** If all the above mentioned methods are found to be inadequate, a full-fledged coordination department itself may be established for the purpose of performing the coordination function. The coordination department may have specialist in different field such as production, marketing, finance and so on and will be in a position to resolve any issues.

### **3. Discuss the various stages in control process.**

#### **Stages Involved in Control Process:**

The following are the stages involved in the process of control:

- a. Establishment of standards.
- b. Measurement of actual performance and making comparisons.
- c. Finding out deviations and
- d. Taking corrective actions.

- **Establishment of standards:**

The first step in the process of control is to establish standards for every business operation. Standards are the criteria against which the actual results can be measured. Standards should as far as possible be set objectively. Some of the examples of quantitative or objective standards are given below:

1. Quantity-production/sales of **10,000 cars**
2. Quality-production of office cupboards numbering thousand using **18 gauge Steel only.**

3. Time-Every tailor employed in a tailoring unit should stitch 5 shirts **within a standard time of 5 hours.**
4. Cost-production of 40 wooden chairs, **the total cost of which should not exceed Rupees 6000.**

Standards may be fixed for individuals, groups, departments and for the enterprise at large.

To be effective, the standard should be-

1. Objective
2. Predetermined
3. Attainable
4. Measurable and
5. Definite.

Standards, if set as shown in the following example, will not serve any purpose “production and sales will be maximized in the current year”.

## **2. Measurement of actual performance and making comparisons:**

After standards have been set the next step is to measure the actual performance of individuals, groups, departments and the enterprise as a whole. For this, up to date information on the progress of work is required. Measurement of performance should be done in quantitative terms. In certain cases, quantitative measurement may not be directly possible. For example, job satisfaction, attitude Etc., cannot be directly measured objectively. In such a case, opinion surveys may be used. The responses may be given scores so that the data may be quantified. After quantifying the data, and appropriate statistical tool may be used for analysis. Based on the analysis, interference can be made.

After the actual performance has been measured, it must be compared with the predetermined standards.

## **3. Finding out deviations**

When the actual performance is compared with the established standards, it will become clear whether the target has been exceeded or just attained or not reached. If the target has been exceeded particularly in the matter of sales, profits or employees attitudes, it is an indication of Greater efficiency at all levels. If the target has just been obtained, the management can be satisfied. If the target has not been reached at all, it should indicate in capacity.

## **4. Taking corrective actions:**

A good control system should try to remove the defects causing deviation from the target. Based on the nature of the defect, corrective action should has to be taken.



Given below are some of the corrective actions that has be taken to remove hurdles;

1. If the instructions given to the Employees have not reached them properly, steps must be taken to improve the quality of instructions.
2. If production target has not been attained owing to breakdown of machinery, steps must be taken to keep the machinery in proper working condition always, maybe, by employing a service person. If there is delay in the raw materials reaching the factory, it becomes necessary to ensure easy availability of raw materials, maybe, by placing a bulk order or by some other method.
3. If lack of employee motivation has contributed to shortfall in performance, the management has to take necessary steps to motivate the employees by offering suitable monetary and non monetary incentives.
4. If the targets set are found to be unrealistic or unreasonable, efforts must be made to set a target that is attainable and in consultation with the employees.

#### **4. State the importance of co-ordination function.**

##### **Importance of coordination:**

1. **Coordination helps to attain common goal** - Every department in an enterprise sets its own goal and strives to attain it. But it is only through coordination, the common goal of enterprise is reached. This is done by integrating the activities of the various departments to secure unity of action.
2. **It helps to avoid overlapping of activities-** co-ordination ensures that there is no duplication of work that is there is no repetition. when a team of 4 or 5 persons is engaged in some work, it is important that they work with proper understanding. Otherwise, the work done by one may be done again by another and this leads to duplication. For example if a market survey is planned, in the absence of co-ordination among the investigators, a customer already approached by one may be approached by another again.
3. **It provides a sense of direction** – In an enterprise where every individual or department performs different activities, it is only coordination that provides a sense of direction to one and all. This it does by connecting all such activities so as to achieve the common goal.
4. **It promotes efficiency-** By avoiding duplication of work and overlapping of activities and also by providing scope for making and optimum use of the enterprise resources, co- ordination promotes efficiency.
5. **It promotes good human relations-**coordination necessitates cooperation and teamwork among the personnel in an organisation. This leads to good human relations and eliminates the scope for unnecessary conflicts and misunderstandings among the individuals.
6. **It reconciles personal goal with the enterprise goal-** Every person in an organisation does his work by setting his personal goal. This can be allowed so long as personal goal and the goal of the organisation do not clash. Co-ordination ensures that no such clash occurs by reconciling both.

**5. Explain budgetary control discuss its merits and demerits.**

**Meaning of budgetary control**

“Budgetary control is a system of control in which all activities of an enterprise are planned ahead in the form of budgets and actual results are compared with the budgetary standard and necessary corrective actions are taken in case of deviations”.

**Evaluation-Merits of budgetary control:**

- a. It provides for a planned approach to every business activities.
- b. It establishes objective standards against which the actuals are measured.
- c. The target set in the various budgets induces the employees to strive to attain it.
- d. Needless to say, budgetary control enables the Enterprise to make an optimum use of the available resources.
- e. Budgetary control also ensures proper coordination among the different departments of a concern. Co-ordination is essential as the activity of every department is influenced by that of another department. For example, production is influenced by the sales target to be attained.

**Limitations of budgetary control:**

- a. The effectiveness of the budgetary control system depends to a large extent on the accuracy with which the budget estimate have been prepared.
- b. It does not allow flexibility in the operations of the Enterprise.
- c. Preparation of budget by itself does not guarantee results. The employees in different departments will have to put in optimum efforts to translate the budgeted target into actual results.
- d. Budgeting is not a substitute for management. It is only a tool. The manager has to use his decision making ability to arrive at wise decisions.

# Unit 1

## Introduction

### Part - A

#### Introduction:

Statistics is a subject that is as old as human life. Statistics is a branch of Mathematics that deals with numerical facts and numbers. The origin of statistics is from the Latin word 'Status' or the Italian word 'Statista'. It came into existence in the 18th century for the collection and arrangement of facts and numbers.

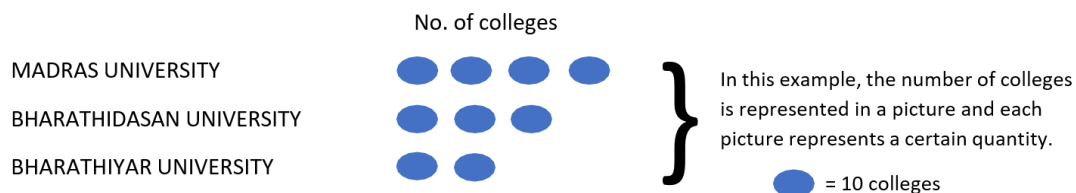
#### Meaning and Definition of Statistics:

##### 1. Define Statistics:

**Ans:** Statistics are numerical statements of facts in any department of inquiry. Yule defines "Statistics as quantitative data, affected to a marked extent by multiplicity of causes". Bowley defines, "Statistics are numerical statements of facts in any department of inquiry. Thus, statistics mean "numerical information" or a method of dealing with numerical information. Olden days people used statistics to record the military details, wealth, taxes, birth, and death details of the government. Like any other science subject, statistics is also a developing discipline. It has been defined in different manners at different times.

##### 2. Define Pictogram:

**Ans:** It is a diagram in which pictures are drawn to represent the data. Each full picture represents a given quantity. For example; The number of colleges in Madras, Bharathidasan, and Bharathiyar University.



##### 3. Define Tabulation:

#### Ans: Tabulation:

It is defined as the "systematic presentation of numerical data in rows and columns designed to facilitate the comparison between the numbers."

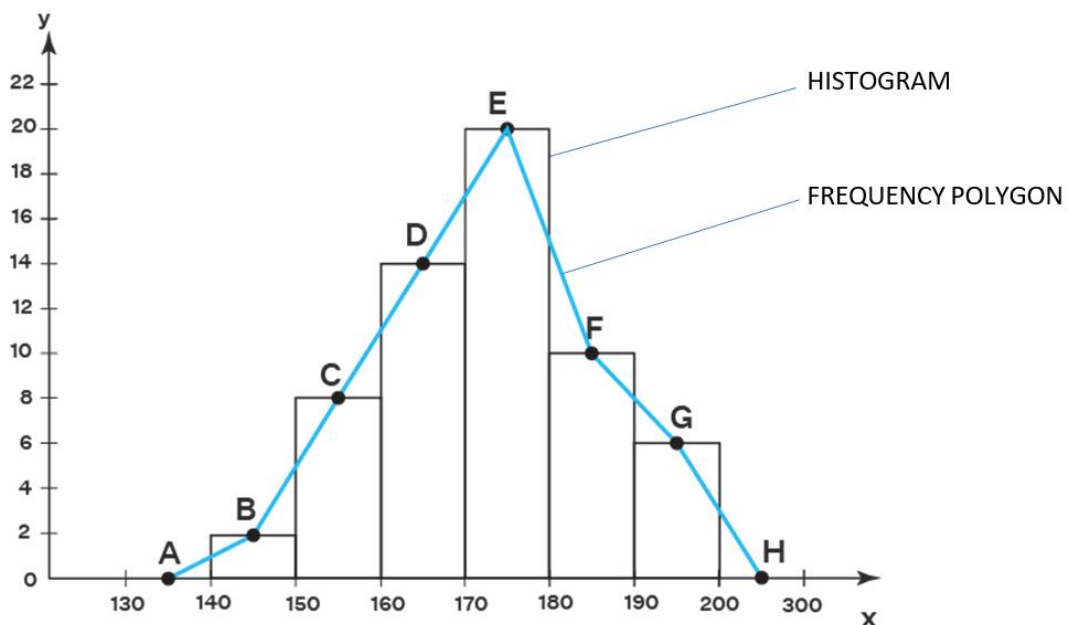
It is a statistical tool used for condensation of data in a statistical process.

**Purpose of Tabulation:** The main purpose of tabulation is to help understand complex numerical data and make them in a simple and clear way. Also, their similar and dissimilar facts are separated.

It is the process of condensing classified data in the form of a table so that it is easier to understand. The main objective of tabulation is to classify the object of investigation to simplify the complex data. It is used to classify the characteristics of data to present data in the minimum space for easy comparison data to detect errors and to depict the trend of the problem under the process.

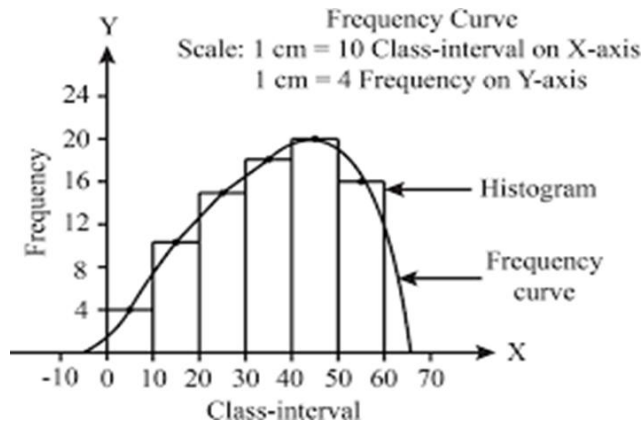
#### 4. Define The Frequency Polygon:

**Ans:** A grouped frequency distribution is represented by a Histogram called a frequency polygon. The easiest method of smoothing the histogram is to draw a frequency polygon. This is drawn by connecting the mid-points of the top of each rectangle with the mid-point of the top of each adjacent rectangle by a straight line. A frequency polygon can also be drawn directly without drawing the Histogram. This can be drawn by plotting the point with the horizontal axis as the midpoints of the classes and the vertical axis as the corresponding frequencies. Then these points are joined by straight lines to get the frequency polygon.



#### 5. Define The Frequency Curve:

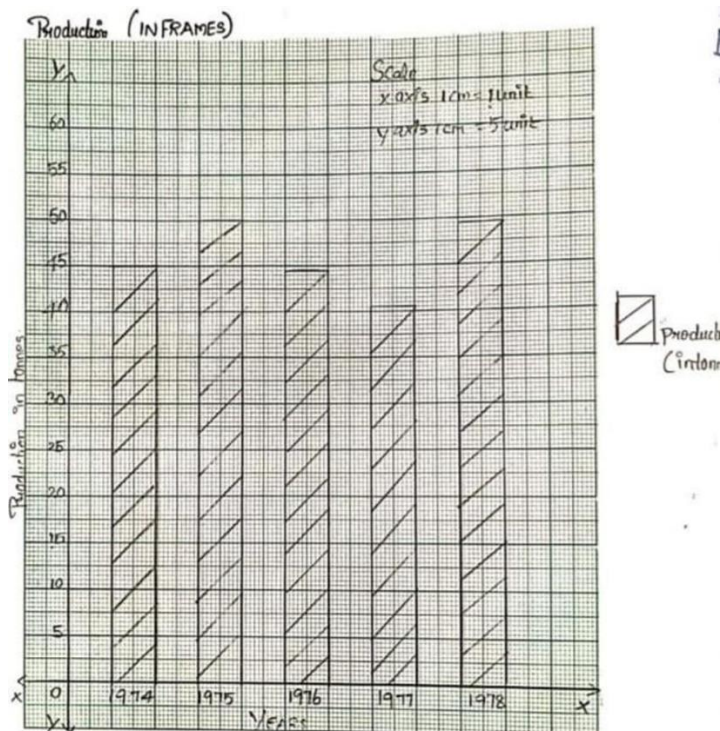
**Ans:** A Frequency Curve is a smooth curve that corresponds to the limiting case of a histogram computed for a frequency distribution of a continuous distribution as the number of data points becomes very large.



6. Represent The Following Data by A Simple Bar Diagram:

Year (x)	Production(in tons)
1974	45
1975	50
1976	44
1977	41
1978	49

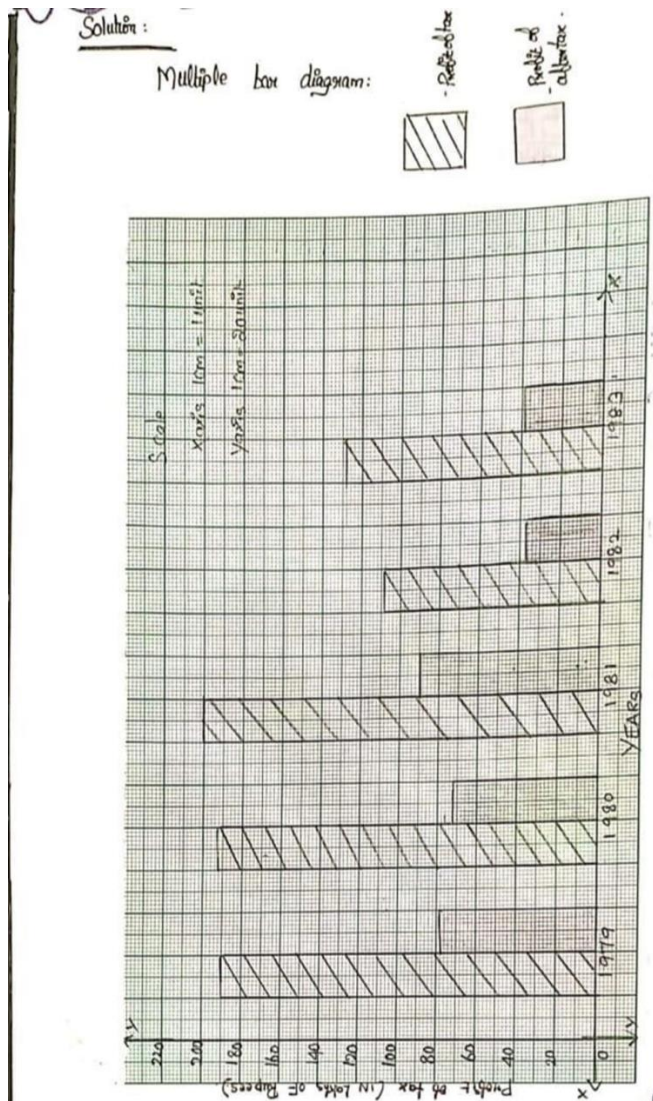
Soln.



**Part - B**

**Question 1:** Represent the profit before tax and profit after tax for the following years ended 30<sup>th</sup> September 1979, 1980, 1981, 1982, and 1983. According to the Presented data of the public limited company mentioned below, Soln. Financial highlights of the public limited company

Year ended 30 <sup>th</sup> September	Profit before tax (rupees in lakhs)	Profit after tax (rupees in lakhs)
1979	190	79
1980	191	71
1981	200	90
1982	109	36
1983	127	39

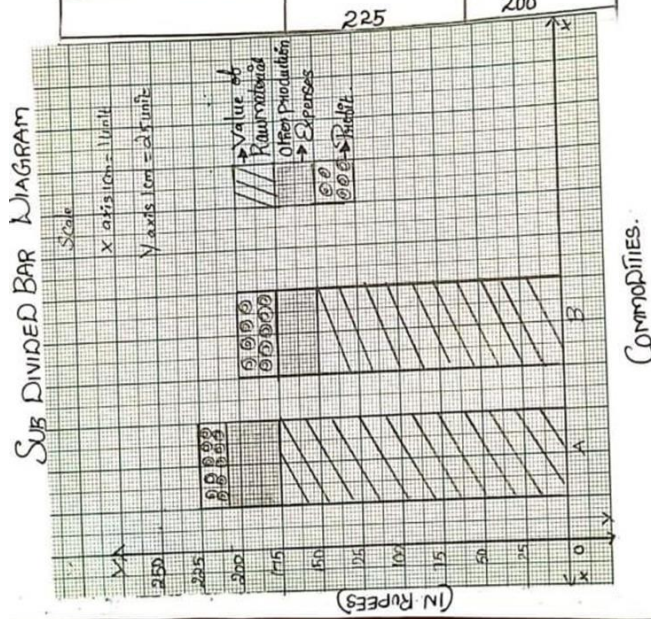


**Question 2:** Represent the following data by a sub-divided bar diagram.

	Commodities	
	A (in Rs)	B (in Rs)
Price per unit	3	2
Quantity sold	75	100
Value of raw material	175	150
Other production expenses	30	25
Profit	20	25

Solution: Given:

	Commodities	
	A (INRS)	B (INRS)
Price Per unit	3	2
Quantity Sold	75	100
Value of raw material	175	150
Other Expenses	30	25
Profit	20	25
	225	200



**Question 3:** Write the characteristics of a good table:

**Ans:** Characteristics of a good table:

- A statistical table should contain a clear and precise title.
- When a number of tables are presented in the analysis of statistical data the serial numbers should be given in the table.
- The description of columns, rows, sub-rows, and sub-columns should be well-defined.
- The unit of measurement used should be clearly indicated.
- The tables should be neat and attractive.
- Data that are comparable should be given side by side.
- Horizontal and vertical lines should be drawn to separate adjacent, rows and columns.
- Column tables and row tables should be shown.
- If the data has several sub-classifications if possible it can be presented in more than one table.

**Question 4:** Write a note on misuses of statistics. Misuses of statistics:

Statistics is an important tool for sciences and has its applications in almost every field. If Statistical methods are not carefully used, then it may lead to unsatisfactory results and dangerous conclusions.

Statistics can be misused and misrepresented by an inexpert, and some wrong comments like, "Statistics can prove anything," make it obvious that statistics can be used to misrepresent anyone easily.

**Explanation:** "Statistics can prove anything" Statistics is like clay which can be molded in any way so as to establish right or wrong conclusions. For example, if we compare the per capita income of India for the last 40 years, we arrive at the conclusion that the Indian economy is making progress.

**Question 5:** Write a note on the limitations of statistics. Limitations of statistics:

- Statistics can be only used to study numerical valued data.
- Statistics deals only with aggregate and not individual data
- Statistical data are true only on average.
- Statistical laws can never be stated as universal truth.
- Statistical data collected for a given purpose cannot be applied to any situation.

**Question 6:** Draw the pie diagram to represent the following population in town:

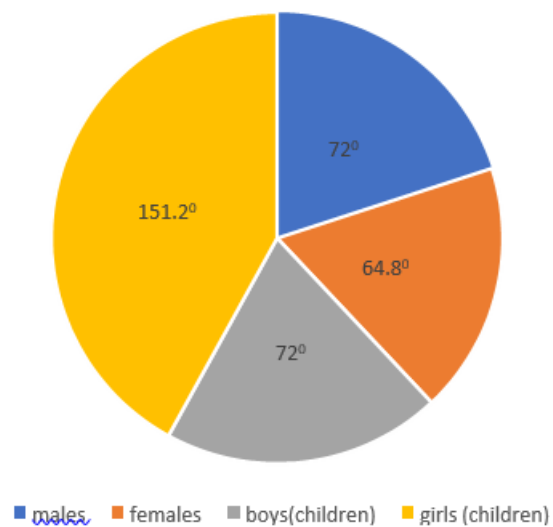
Males	Females	Boys	Girls
2000	1800	2000	4200



Soln. Given: degree table

		Degree value
Males	$2000\left(\frac{2000}{10000} \times 360\right)$	$72^\circ$
Females	$1800\left(\frac{1800}{10000} \times 360\right)$	$64.8^\circ$
Boys (children)	$2000\left(\frac{2000}{10000} \times 360\right)$	$72^\circ$
Girls (children)	$4200\left(\frac{4200}{10000} \times 360\right)$	$151.2^\circ$
Total	10000	$360^\circ$

pie diagram



### Part - C

**Question 1:** What is a histogram? Construct a histogram and a frequency polygon for the following.

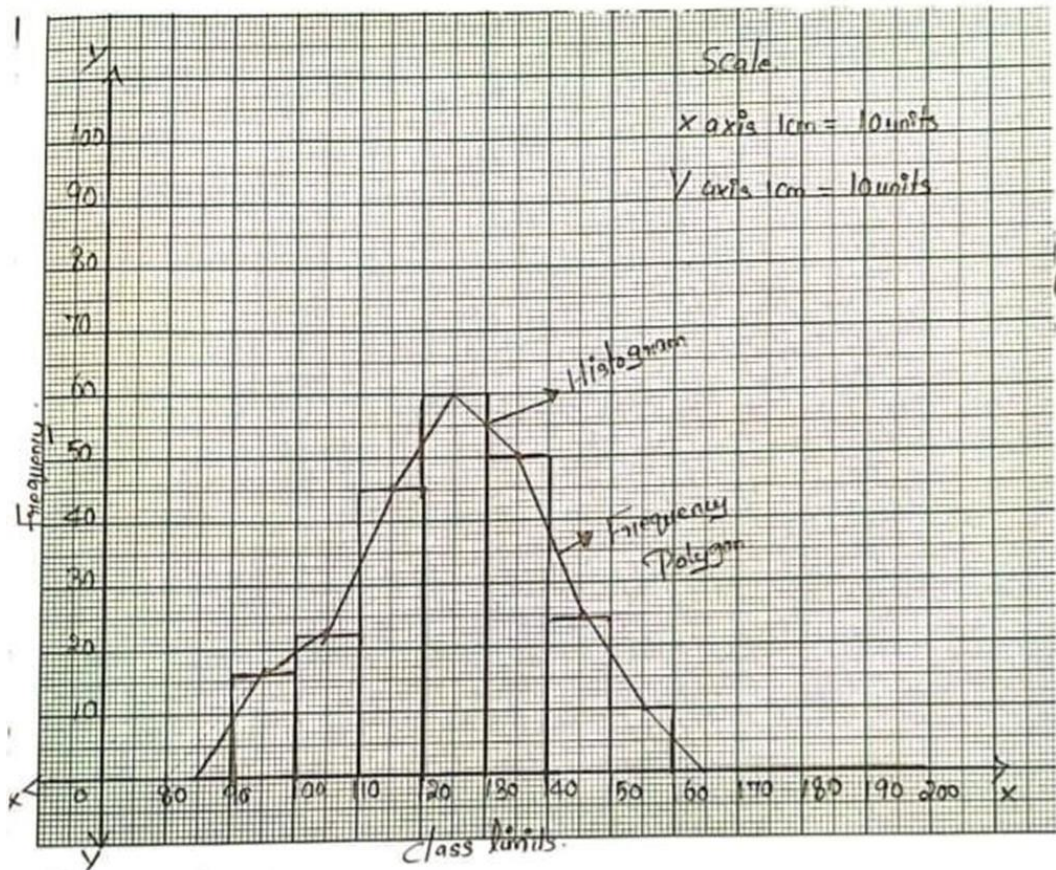
**Ans:**

<b>Class limits</b>	90-100	100-110	110-120	120-130	130-140	140-150	150-160
<b>Frequency</b>	16	22	45	60	50	24	10

Soln.

**Histogram:** The most important and commonly used graph for presenting a frequency distribution of continuous series is called Histogram. Here, the variable may be discrete or continuous. In the case of a discrete variable, a line graph is drawn. In the case of continuous variable Histogram is drawn.

The area of each bar is proportional to the frequency of the corresponding class. Such a diagram is called a Histogram.

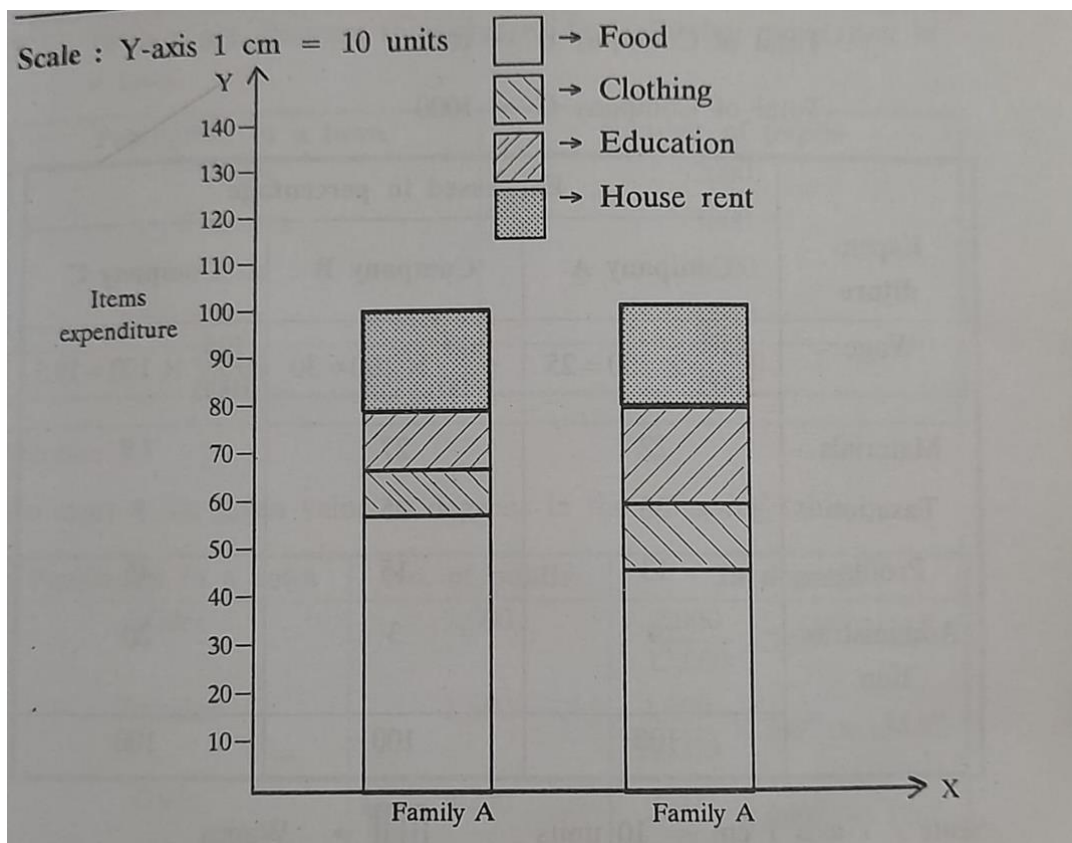


**Question 2:** Draw a percentage bar diagram for the following data.

Items of expenditure	Expenditure Family A	In Rupees Family B
Food	700	400
Clothing	100	100
Education	150	200
House rent	300	200

Soln.

Items of expenditure	Expenditure Family A	In Rupees Family B
Food	700( $\frac{700}{1250} \times 100 = 56$ )	400( $\frac{400}{900} \times 100 = 44.4$ )
Clothing	100( $\frac{100}{1250} \times 100 = 8$ )	100( $\frac{100}{900} \times 100 = 11.1$ )
Education	150( $\frac{150}{1250} \times 100 = 12$ )	200( $\frac{200}{900} \times 100 = 22.2$ )
House rent	300( $\frac{300}{1250} \times 100 = 24$ )	200( $\frac{200}{900} \times 100 = 22.2$ )
Total	1250=100	900=100

**Question 3:**

Explain Briefly the uses of various diagrams in presenting statistical data.

**Ans:** The uses of various diagrams in representing statistical data.

There are many types of diagrammatic representation of statistical data. The following are some of them.

1. Bar diagram (one-dimensional)
2. pie diagram or area diagram (two-dimensional)
3. pictogram or Volume diagram (three-dimensional)
4. Histogram, frequency polygon, and frequency curve
5. cumulative frequency curve or ogive curve

### **1. Bar Diagram:**

A bar diagram is a popular form of diagram representation.

- a) vertical bar diagram
- b) horizontal bar diagram

The bar diagram can be classified as:

- i) Simple bar diagram
- ii) Multiple bar diagram
- iii) Component bar diagram or sub-divided bar diagram
- iv) Percentage bar diagram

- i) **Simple bar diagram:** A simple bar diagram represents the magnitude of a single variable like sales, production, profits, etc...
- ii) **multiple bar diagrams:** A multiple-bar diagram is used to compute two or more sets of statistical data. Bars are constructed side by side to represent the set of values for comparison.
- iii) **Component or sub-divided bar diagram:** Here each bar represents the total value of data which is sub-divided into different components or parts. This enables comparison between different components and also between a component and the whole.
- iv) **Percentage bar diagram:** This is another form of component bar diagram. Here the components are not actual values but percentages of value.

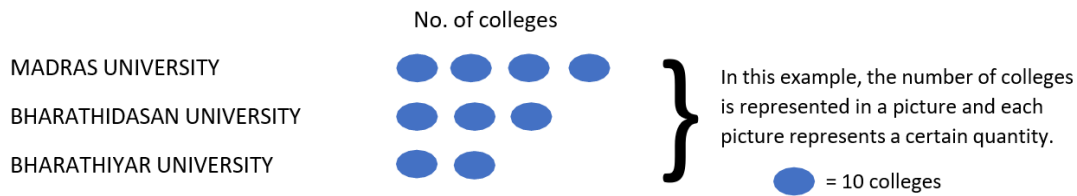
### **2. Pie diagram (Area diagram):**

A pie diagram is a pictorial representation of statistical data with several sub-divisions in a circular form. For example, the distribution of the revenue (cost, sales, profits, reserves, etc.)

### **3. Pictogram:**

It is a diagram in which pictures are drawn to represent the data. Each full picture represents a given quantity. For example; The number of colleges in Madras, Bharathidasan, and Bharathiyar University.

**No. of colleges**



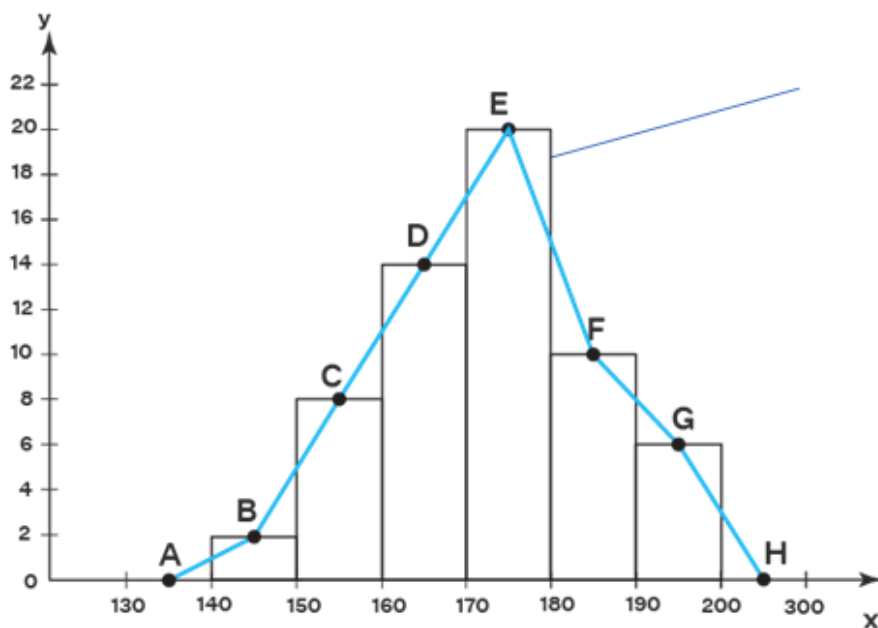
**4. Histogram:**

The most important and commonly used graph for presenting a frequency distribution of continuous series is called Histogram. Here, the variable may be discrete or continuous. In the case of a discrete variable, a line graph is drawn. In the case of continuous variable Histogram is drawn.

The area of each bar is proportional to the frequency of the corresponding class. Such a diagram is called a Histogram.

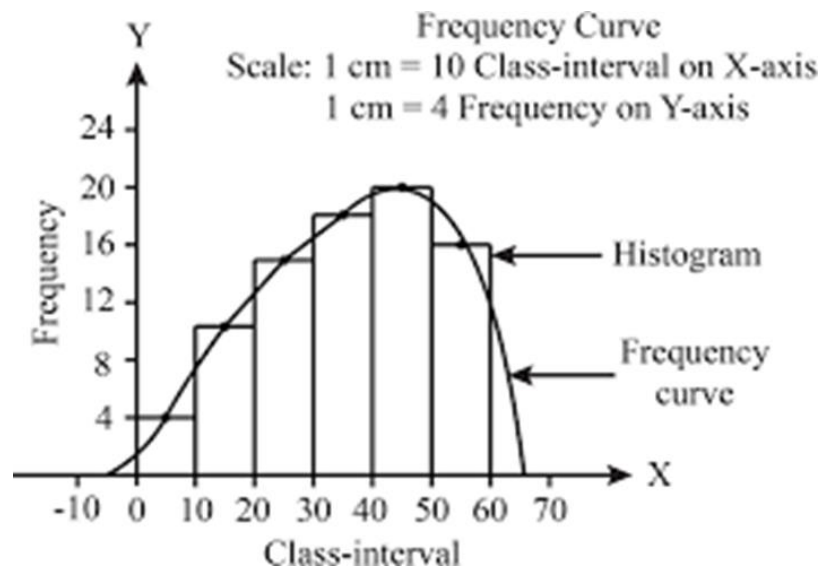
**5. Frequency Polygon:**

A grouped frequency distribution is represented by a Histogram called a frequency polygon. The easiest method of smoothing the histogram is to draw a frequency polygon. This is drawn by connecting the mid- points of the top of each rectangle with the mid-point of the top of each adjacent rectangle by a straight line. A frequency polygon can also be drawn directly without drawing the Histogram. This can be drawn by plotting the point with the horizontal axis as the midpoints of the classes and the vertical axis as the corresponding frequencies. Then these points are joined by straight lines to get the frequency polygon.



## 6. Frequency Curve:

A Frequency Curve is a smooth curve that corresponds to the limiting case of a histogram computed for a frequency distribution of a continuous distribution as the number of data points becomes very large.



## 7. Ogive Curve:

It is a graphical representation of the cumulative frequency of continuous series. It is drawn by correcting plots of the cumulative frequency and the class limits.

Ogive can be constructed in the following methods.

- Less than ogive
- More than ogive

### Less than ogive:

This consists of plotting “less than” cumulative frequencies against the upper-class boundaries of the respective classes. This curve is an increasing curve, sloping upwards from left to right.

### More than ogive:

These are plotted against the lower-class boundaries of the respective classes.

It is a decreasing curve and slopes downwards from left to right.

**Question 4:** Define primary and secondary data

**Ans:** Primary data:

Data that are collected directly by the investigator himself for any particular inquiry is called primary data.

Example: Own questions Secondary data:

Secondary data is one type of quantitative data that has already been collected by someone else for a different purpose.

Example: Data from the book.

Methods of collecting primary data are

- i) Direct personal interviews
- ii) Indirect oral interviews
- iii) Information through correspondents
- iv) Mailed questionnaire method
- v) By sending schedules to be filled by enumerators

Write a note the on scope of statistics.

Statistics is widely used in day-to-day life, research, and everywhere in different ways

Some of the applications of statistics are here:

**Statistics in Business:** Top business people depend on statistical tools to study the needs and expectations of their customers. A top businessman makes a perfect record in the development of business and should be clear in statistical and business forecasting. Statistical techniques are used in business activities like financial calculation,

**Market Research Manpower Planning Statistics in Economics:**

Statistical facts and statistical tools are helping in solving economic problems like labor, price, and analysis of time series and prediction of trends, etc. It helps us to structure the economic policies and extract their effect.

**Statistics in Industry:** The 'Quality control' tool is widely used in industry. Statistical techniques like 'Control chart' are very useful in finding out whether the product has come out with certain specifications or not.

**Question 5:** Define questionnaire. Write the characteristics of a good questionnaire. Questionnaire:

To obtain all information about an inquiry a set of questions is prepared and it is sent to the selected persons with a request to answer the questions and return it by post.

This method has the advantage of covering a large area and is comparatively cheaper.

It should be as short as possible but should be comprehensive. This means that the questionnaire should only ask the questions that are essential to the research and that it should be easy for respondents to complete. However, it is also important that the questionnaire is comprehensive enough to gather the data that is needed.

It should be attractive. This means that the questionnaire should be visually appealing and easy to read. The font should be clear and easy to read, and the layout should be organized and easy to follow.

Directions should be clear and complete. The directions for completing the questionnaire should be clear and concise. They should explain how to answer each question and what kind of information is being asked for.

It should be represented in good Psychological order proceeding from general to more specific responses. This means that the questions should be arranged in a way that makes sense to the respondents. The questionnaire should start with general questions and then gradually become more specific. This will help to keep the respondents engaged and make it easier for them to answer the questions.

Double negatives in questions should be avoided. Double negatives are confusing and can make it difficult for respondents to understand what is being asked. For example, the question “Do you not disagree with the statement that the government is doing a good job?” is a double negative. It would be better to ask the question “Do you agree with the statement that the government is doing a good job?”

Putting two questions in one question also should be avoided. This is because it can be difficult for respondents to answer two questions at once. It is better to ask one question at a time and then ask another question.

Every question should seek to obtain only one specific information. This means that each question should be focused on gathering one piece of information. This will help to make the questionnaire more efficient and easier to analyze.

**Question 5:** Below is the frequency distribution of marks in mathematics obtained by 100 students in a class.

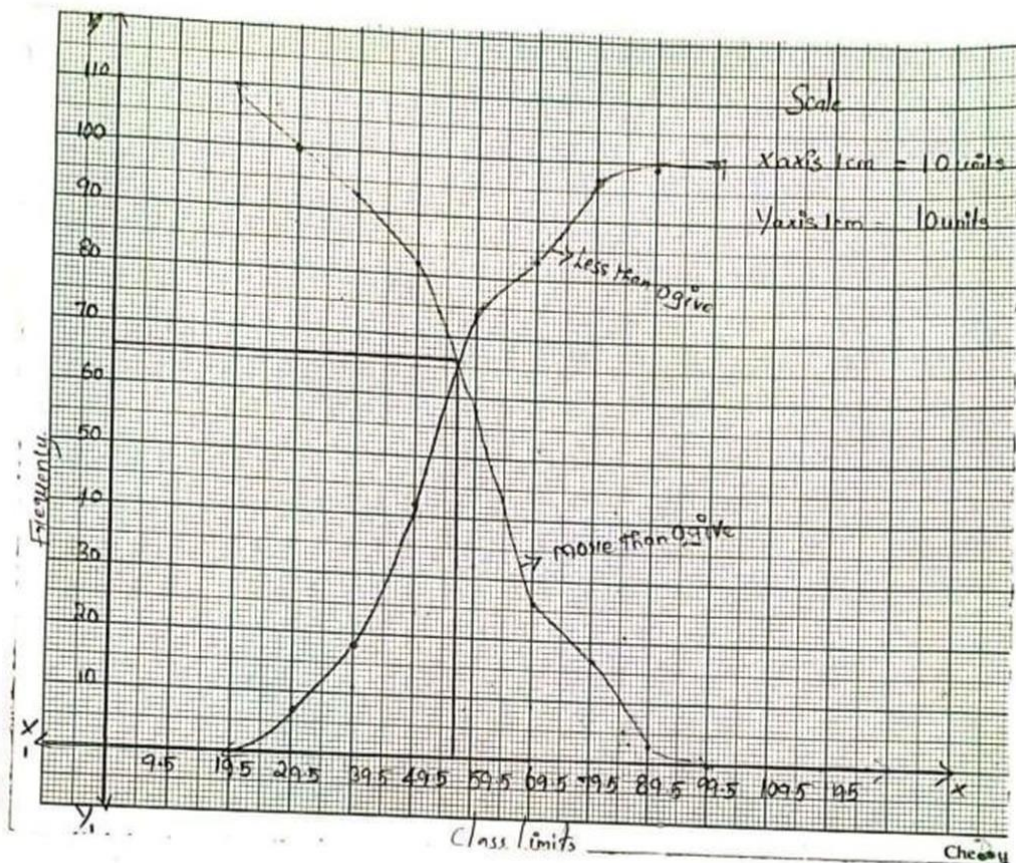
<b>Marks</b>	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99
<b>Class limits</b>	7	11	24	32	9	14	2	1

Draw the ogives (Less than, more than) for the distribution and use them to determine the median.



Soln,

			Cumulative frequencies	
Wrong cl	Correct cl	f	Less than	More than
20-29	19.5-29.5	7	7	100
30-39	29.5-39.5	11	18	93
40-49	39.5-49.5	24	42	82
50-59	49.5-59.5	32	74	58
60-69	59.5-69.5	9	83	26
70-79	69.5-79.5	14	97	17
80-89	79.5-89.5	2	99	3
90-99	89.5-99.5	1	100	1



## Unit 2

### Measures of Central Tendency

#### Part - A

**Question 1:** Find the median of the following set of observations.

37, 32, 42, 36, 39, 21, 46, 57, 27, 31, 28, 30, 31

Soln.

Ascending order = 21,27,28,30,31,31,32,36,37,39,42,46,57

n = 13 (odd)

$$\text{Median} = \left[ \frac{N + 1}{2} \right]^{th} \text{ term}$$

$$= \left[ \frac{13 + 1}{2} \right]^{th} \text{ term}$$

$$= \left[ \frac{14}{2} \right]^{th} \text{ term}$$

$$= 7^{th} \text{ term}$$

$$\text{Median} = 32$$

**Question 2:** Definition of Arithmetic mean (A.M)

**Ans:** The Arithmetic mean is a set of N observations i.e.;  $x_1, x_2, x_3, \dots, x_n$ .

The arithmetic mean is denoted as  $x = \frac{x_1 + x_2 + x_3 + \dots + x_n}{n} = \frac{\sum x}{n}$

**Question 3:** Find the mode of the following set of observation

a) 5, 6, 7, 3, 4, 5, 6, 3, 4, 7, 6

b) 15, 12, 5, 13, 13, 15, 1, 15, 9, 8

Soln.

a) ascending order = 3, 3, 4, 4, 5, 5, 6, 6, 6, 7

mode = most frequency value

mode = 6 [3 times]

b) ascending order = 1, 5, 8, 9, 12, 12, 13, 15, 15, 15

mode = most frequency value

mode = 15 [3 times]

**Question 4:** Calculate the harmonic mean for the following quantities.

3, 6, 24, 48

Given; 3, 6, 24, 48  $n=4$

$$\text{Harmonic mean} = \frac{n}{\frac{1}{x_1} + \frac{1}{x_2} + \dots + \frac{1}{x_n}} = \frac{n}{\sum \frac{1}{x}}$$

$$H.M = \frac{4}{\frac{1}{3} + \frac{1}{6} + \frac{1}{24} + \frac{1}{48}}$$

$$= \frac{4}{\frac{16 + 8 + 2 + 1}{48}}$$

$$= \frac{4 \times 48}{27}$$

$$H.M = 7.11$$

**Question 5:** Write the merits and demerits of geometric mean.

**Ans:**

Merits:

- It is well defined and depends on all the observations
- It is suitable for algebraic treatment
- It is not very much affected by the presence of extreme value.

Demerits:

- It is not easy to evaluate
- It cannot be calculated if one of the items is zero
- G.M can be determined only for positive valued observations.

**Part - B**

**Question 1:** Find the A.M from the following data.

<b>Weight (in kg's) x</b>	35	40	45	50	55	60
<b>No of men (f)</b>	12	18	24	16	6	4

Soln.

<b>Weight (in kg's) x</b>	<b>No of men(f)</b>	<b>fx</b>
35	12	420
40	18	720
45	24	1080
50	16	800
55	6	330
60	4	240
	$N = \sum f = 80$	$\sum fx = 3590$

$$A.M. = \frac{\sum fx}{N}$$

$$= \frac{3590}{80}$$

$$A.M. = 44.87$$

**Question 2:** There are 50 students in a class of which 40 are boys and girls. The average weight of the class is 44 kg and the average weight of the girls is 40 kg. Find the average weight of the boys.

Soln. Given

<b>No of students</b>	<b>Boys</b>	<b>Girls</b>
$n_1+n_2=50$	$n_1=40$	$n_2=50-40=10$
$\bar{X} = 44\text{kg}$	$\bar{X}_1=?$	$\bar{X}_2=40\text{kg}$

$$\text{Combined mean, } \bar{X} = \frac{n_1X_1 + n_2X_2}{n_1 + n_2}$$

$$44 = \frac{40(X_1) + 10(40)}{50}$$

$$2200 = 40X_1 + 400$$

$$2200 - 400 = 40X_1$$

$$X_1 = \frac{1800}{40}$$

$$X_1 = 45kg$$

*The average weights of boys  $X_1 = 45kg$*

### Question 3:

Define Harmonic Mean Write the merits and demerits

Harmonic mean:

- The Harmonic mean of a set of n observations  $x_1, x_2, x_3, \dots, x_n$
- Denoted as  $H.M = \frac{n}{\frac{1}{x_1} + \frac{1}{x_2} + \dots + \frac{1}{x_n}}$

Merits:

- It is well defined
- It is based on all observations
- It is suitable for algebraic treatment
- It can be used in averaging rates, ratios etc...,

Demerits:

- It is not easy to understand
- It cannot be calculated if any one of the items is zero.

### Question 4:

Determine the median wages from the following data.

Wages in Rs	No of workers
20-40	4
40-60	6
60-80	10
80-100	16
100-120	12
120-140	7
140-160	3

Wages in Rs (C)	No of workers (f)	Cumulative frequency (cf)
20-40	4	4
40-60	6	10
60-80	10	20
80-100	16	36
100-120	12	48
120-140	7	55
140-160	3	58
	N=58	

$$\frac{N}{2} = \frac{58}{2} = 29, l = 80, m = 20, f = 16, c = 100 - 80 = 20$$

$$Median = l + \frac{\frac{N}{2} - M}{f} \times c$$

$$= 80 + \frac{29 - 20}{16} \times 20$$

$$= 80 + \frac{9 \times 20}{16}$$

$$= 80 + \frac{180}{16}$$

$$= 80 + 11.25$$

$$Median\ wages = 91.25$$

**Question 5:** What are various types of measures of averages. Give some characteristics of a good average.

The various measures of averages

- Mean
- Median
- Mode

There are three types of mean that are used. They are,

- Arithmetic mean
- Geometric mean
- Harmonic mean

The characteristics of a good average

- It should be well defined
- It should be easy to compute
- It should be based on all observations
- It should be capable of further algebraic treatment
- It should not be, affected by extreme observations
- It should not be affected by sampling fluctuations.

### Part - C

**Question 1:** Find the mode of the following distribution

<b>Class limits</b>	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95
<b>Frequency</b>	2	3	5	7	9	11	7	2	3	1

Soln.

<b>Class limits</b>	<b>Correct class limits</b>	<b>Frequency</b>
46-50	45.5-50.5	2
51-55	50.5-55.5	3
56-60	55.5-60.5	5
61-65	60.5-65.5	7
66-70	65.5-70.5	9
71-75	70.5-75.5	11
76-80	75.5-80.5	7
81-85	80.5-85.5	2
86-90	85.5-90.5	3
91-95	90.5-95.5	1

$$l = 70.5, f_1 = 11, f_0 = 9, f_2 = 7, c = 75.5 - 70.5 = 5$$

$$Mode = l + \frac{f_1 - f_2}{2f_1 - (f_0 + f_2)} \times c$$

$$= 70.5 + \frac{11 - 9}{2(11) - (9 + 7)} \times 5$$

$$= 70.5 + \frac{2}{22 - 16} \times 5$$

$$= 70.5 + \frac{10}{6}$$

$$mode = 72.17$$

**Question 2:**

The following table given the weekly expenditure of 100 families. find the median weekly expenditure

<b>Weekly expenditure</b>	0-10	10-20		20-30	30-40	40-50
<b>No of Families</b>	14	23		27	21	15

Soln.

<b>Weekly expenditure (in Rs.) C.L</b>	<b>No of families</b>	<b>Cf</b>
0-10	14	14
10-20	23	37
20-30	27	64
30-40	21	85
40-50	15	100

$$\frac{N}{2} = \frac{100}{2} = 50, l = 20, m = 37, f = 27, c = 30 - 20 = 10$$

$$Median = l + \frac{\frac{N}{2} - M}{f} \times c$$

$$Median = 20 + \frac{50 - 37}{27} \times 10$$



$$\text{Median} = 20 + \frac{13}{27} \times 10$$

$$\text{Median} = 20 + \frac{130}{27}$$

$$\text{Median} = 20 + 4.81$$

$$\text{Median} = 24.81$$

**Question 3:**

From an ordinary frequency table from the following cumulative distribution of marks obtained by 22 students and calculate i) mean ii) median

Marks (C-I)	Below 10	Below 20	Below 30	Below 40	Below 50
No of students(C-F)	3	8	17	20	22

Soln.

Marks C-L	No of students f	cf	Mid-point x	$\alpha = \frac{x - a}{c}$	fd
0-10	3	3	45	-2	-6
10-20	5	8	15	-1	-5
20-30	9	17	25	0	0
30-40	3	20	35	1	3
40-50	2	22	45	2	4
	N=22				$\sum fd = 4$

**1. Mean:**

$$\text{Mean} = A + \frac{\sum fd}{N} \times c$$

$$\text{Mean} = 25 + \frac{-4}{22} \times 10$$

$$\text{Mean} = 25 - \frac{40}{22}$$

$$\text{Mean} = 25 - 1.8$$

$$\text{Mean} = 23.2$$

**2. Median:**

$$\text{Median} = l + \frac{\frac{N}{2} - M}{f} \times c$$

$$\text{Median} = 20 + \frac{11.8}{9} \times 10$$

$$\text{Median} = 20 + \frac{30}{9}$$

$$\text{Median} = 20 + 3.3$$

$$\text{Median} = 23.3$$

**Question 4:**

Define median and mode. Write the merits and demerits.

**Ans:**

**Median:**

- If the observations are arranged in ascending order or descending order of magnitude, the middle most item is called the median
- $\text{Median} = l + \frac{\frac{N}{2} - M}{f} \times c$

**Merits:**

- It is easy to understand
- It is easily determined
- It is not affected by an extreme value

**Demerits:**

- It is not well defined
- It is not based on all observations
- It cannot be accurate
- It is not suitable for algebraic treatment
- It is affected by sampling fluctuations

**Mode:**

- Mode is defined to be that value which occurs most often.

$$\bullet \text{ Mode} = l + \frac{f_1 - f_0}{2f_1 - (f_0 + f_2)} \times c$$

**Merits:**

- It is easy to understand.
- It can be easily located.
- It can be determined by inspection.
- It is not affected by extreme values.

**Demerits:**

- It is not well defined
- It is not based on all observations
- It is not suitable for algebraic treatment
- It is affected by sampling fluctuations

**Question 5:**

The Arithmetic mean calculated from the following frequency distribution is known to be 67.5 inches.

Find the missing frequency.

Heights (in inches)	60-62	63-65	66-68	69-71	72-74
Frequency	15	54	x	81	24

Heights (in inches) Correct value	Frequency f	Mid-point x	$\alpha = \frac{x - a}{c}$	fd
59.5-62.5	15	61	-2	-30
62.5-65.5	54	64	-1	-54
65.5-68.5	X	67	0	0
68.5-70.5	81	70	1	81
70.5-74.5	24	73	2	48
	N= 174+x			$\sum fd = 45$

$$A.M. = 67.5, A = 67, c = 3, N = 174 + x, \sum fd = 45$$

$$\text{Arithmetic mean} = A + \frac{\sum fd}{N} \times c$$

$$67.5 = 67 + \frac{45}{174 + x} \times 3$$

$$67.5 - 67 = \frac{135}{174 + x}$$

$$0.5(174 + x) = 135$$

$$87 + 0.5x = 135$$

$$0.5x = 135 - 87$$

$$0.5x = 48$$

$$x = \frac{48}{0.5}$$

$$x = 96$$

*The missing frequency  $x = 96$*

## Unit 3

### Part - A

#### Question 1:

Find the Range and the coefficient of the Range of the following data.

25, 36, 41, 39, 22, 46, 24, 29, 40, 36, 28, 31, 45, 29, 34.

Largest value = 46

Smallest value = 22

$\therefore \text{Range} = 24$

$$\therefore \text{co efficient of range} = \frac{L - S}{L + S}$$

$$= \frac{46 - 22}{46 + 22}$$

$$= \frac{24}{68}$$

$\therefore \text{co efficient of range} = 0.352$

#### Question 2:

Write the various types of measures of dispersion.

The various Measures of Dispersion are,

1. Range
2. Quartile deviation
3. Mean deviation
4. Standard deviation

#### Question 3:

Write the Relative measure of mean deviation.

The Relative Measure of Mean deviation:

1. The co-efficient of mean deviation about mean =  $\frac{M.D}{Mean}$
2. The co-efficient of median deviation about median =  $\frac{M.D}{Median}$

**Question 4:**

Define standard deviation

**Standard Deviation:**

It is defined as the positive square root of the AM of the squares of all deviations of the observations from their A.M.S.D is denoted by the symbol 'σ'. For a set of observations  $X_1, X_2, \dots, X_n$ .

$$\sigma = \sqrt{\frac{\sum(x_1 - \bar{x})^2}{n}}, i = 1, 2, 3 \dots, n$$

**Part - B**

**Question 1:**

Define Mean deviation. Write the merits of it.

**Mean Deviation:**

Let  $x_1, x_2, x_3, \dots, x_n$  be n values. The mean deviation about mean is given by

$$M.D = \frac{\sum|X_1 - \bar{X}|}{n}, i = 1, 2, 3 \dots, n$$

**Merits:**

- Mean deviation is based on all observations.
- It is simple to understand and easy to calculate.
- It is stable.
- It is not very much affected by the presence of extreme values.

**Question 2:**

Find the S.D of the set of number.

3, 8, 6, 10, 12, 9, 11, 10, 12, 7.

Soln.

X	X <sup>2</sup>
3	9
8	64
6	36
10	100
12	144
9	81
11	121
10	100
12	144
7	49
$\sum x = 88$	$\sum x^2 = 848$

$$S.D\sigma = \sqrt{\frac{\sum x^2}{n} - \left(\frac{\sum x}{n}\right)^2}$$

$$n = 10$$

$$\sigma = \sqrt{\frac{848}{10} - \left(\frac{88}{10}\right)^2}$$

$$= \sqrt{84.8 - 77.44}$$

$$= \sqrt{7.36}$$

$$S.D\sigma = 2.71$$

**Question 3:**

Find the Range and the co-efficient of Range of the marks obtained by 100 students given below:

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of students	13	8	7	10	11	23	18	10

Soln.

Class limits Marks	No. of students F	Mid point X
0-10	13	5
10-20	8	15
20-30	7	25
30-40	10	35
40-50	11	45
50-60	23	55
60-70	18	65
70-80	10	75

$\therefore$  Largest value = 75, Smallest value = 5

$\therefore$  Range =  $L - S = 75 - 5 = 70$

$$\text{co-efficient of range} = \frac{L - S}{L + S} = \frac{75 - 5}{75 + 5} = \frac{70}{80} = 0.875$$

**Question 4:**

Find the Mean deviation about the Mean of the following data.

Class	0-5	5-10	10-15	15-20	20-25	Total
Frequency	3	5	12	6	4	30

Soln.

Class	Frequency F	Mid-point X	$\alpha = \frac{x - a}{c}$	Fd	X-Mean	F X-M
0-5	3	2.5	-2	-6	10.5	31.5
5-10	5	7.5	-1	-5	5.5	27.5
10-15	12	12.5	0	0	0.5	6
15-20	6	17.5	1	6	4.5	27
20-25	4	22.5	2	8	9.5	38
	N= 30			$\Sigma fd = 3$		$\Sigma f X - \bar{X}  = 130$



$$\text{Mean} = A + \frac{\sum fd}{N} \times c$$

$$= 12.5 + \frac{3}{30} \times 5$$

$$= 12.5 + 0.5$$

$$\text{Mean, } \bar{X} = 13$$

$$\text{Mean deviation} = \frac{\sum f|X - \bar{X}|}{N}$$

$$= \frac{130}{30}$$

$$\therefore \text{MD about Mean} = 4.333$$

**Question 5:**

Calculate the Quartile deviation from the following frequency distribution.

<b>Value of items X</b>	12	13	14	25	26	27	38	40
<b>Frequency F</b>	2	3	5	8	7	3	2	1

Soln.

<b>x</b>	<b>F</b>	<b>CF</b>
12	2	2
13	3	5
14	5	10
25	8	18
26	7	25
27	3	28
38	2	30
40	1	31
	N=31	

$$\text{Quartile deviation} = \frac{Q_1 - Q_2}{2}$$

$$Q_1 = \left(\frac{N+1}{4}\right)^{th} \text{ term}$$

$$= \left(\frac{31+1}{4}\right)^{th} \text{ term}$$

$$= \left(\frac{32}{4}\right)^{th} \text{ term}$$

$$= 8^{th} \text{ term}$$

$$Q_1 = 14$$

$$Q_3 = \left(\frac{3(N+1)}{4}\right)^{th} \text{ term}$$

$$Q_3 = \left(\frac{3(31+1)}{4}\right)^{th} \text{ term}$$

$$Q_3 = \left(\frac{3(32)}{4}\right)^{th} \text{ term}$$

$$Q_3 = 24^{th} \text{ term}$$

$$Q_3 = 26$$

$$\therefore QD = \frac{26 - 14}{2}$$

$$= \frac{12}{2} = 6$$

$$Q.D = 6$$

$$C.Q.D = \frac{Q_3 - Q_1}{Q_3 + Q_1}$$

$$= \frac{26 - 14}{26 + 14}$$

$$= \frac{12}{40}$$

$$C.Q.D = 0.3$$

**Question 6:**

Find the Mean deviation about Mean for the following data.

18, 20, 12, 14, 19, 22, 26, 16, 19, 24.

Soln.

$x$	$x - \bar{x}$	$ x - \bar{x} $
18	-1	1
20	1	1
12	-7	7
14	-5	5
19	0	0
22	3	3
26	7	7
16	-3	3
19	0	0
24	5	5
$\sum x = 190$		$\sum  x - \bar{x}  = 32$

$$\bar{x} = \frac{\sum x}{n} = \frac{190}{10}$$

$$\therefore \bar{x} = 19$$

$$\text{Mean deviation about Mean} = \frac{\sum |x - \bar{x}|}{N}$$

$$N = 10, \sum |x - \bar{x}| = 32$$

$$= \frac{\sum |x - \bar{x}|}{N}$$

$$= \frac{32}{10}$$

$$\text{Mean deviation about Mean} = 3.2$$

**Part - C**

**Question 1:**

Calculate the Quartile deviation and its co efficient for the following frequency distribution.

<b>Marks CL</b>	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
<b>No. of students</b>	8	12	10	48	42	18	8	4

Soln.

<b>Marks CL</b>	<b>No. of students</b>	<b>Cumulative Frequency</b>
0-10	8	8
10-20	12	20
20-30	10	30
30-40	48	78
40-50	42	120
50-60	18	138
60-70	8	146
70-80	4	150
	N = 150	

$$\text{Quartile deviation} = \frac{Q_3 - Q_1}{2}$$

$$\text{Co efficient of Q.D} = \frac{Q_3 - Q_1}{Q_3 + Q_1}$$

$$Q_1 = \frac{l_1 + \frac{N}{4} - m}{F_1} \times C_1$$

$$\frac{N}{4} = \frac{150}{4} = 37.5$$

$$Q_1 = 30 + \frac{37.5 - 30}{48} \times 10$$

$$= 30 + \frac{7.5}{48} \times 10$$

$$Q_1 = 30 + \frac{75}{48}$$

$$Q_1 = 30 + 1.5625$$

$$Q_1 = 31.5625$$

$$Q_3 = l_3 + \frac{\frac{3N}{4} - m}{F_3} \times c$$

$$\frac{3N}{4} = \frac{3 \times 150}{4} = 3 \times 37.5 = 112.5$$

$$Q_3 = 40 + \frac{112.5 - 78}{42} \times 10$$

$$Q_3 = 40 + \frac{34.5}{42} \times 10$$

$$= 40 + \frac{345}{42}$$

$$Q_3 = 48.2143$$

$$\text{Quartile deviation} = \frac{Q_3 - Q_1}{2}$$

$$= \frac{48.2143 - 31.5625}{2}$$

$$= \frac{16.6518}{2}$$

$$Q.D = 8.3259$$

$$\text{Co efficient of Quartile Deviation} = \frac{Q_3 - Q_1}{Q_3 + Q_1}$$

$$= \frac{48.2143 - 31.5625}{48.2143 + 31.5625}$$

$$= \frac{16.6518}{79.7768}$$

$$\therefore C.Q.D = 0.2087$$

**Question 2:**

Calculate the Mean deviation about the Mean for the following data.

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	8	12	10	8	3	2	7

Soln.

CL	F	x	$\alpha = \frac{x - a}{c}$	Fd	$ X - \bar{X} $	F $ X - \bar{X} $
0-10	8	5	-3	-24	24	192
10-20	12	15	-2	-24	14	168
20-30	10	25	-1	-10	4	40
30-40	8	35	0	0	6	48
40-50	3	45	1	3	16	48
50-60	2	55	2	4	26	52
60-70	7	65	3	21	36	252
	N=50			$\sum fd = 30$		$\sum f x - \bar{x}  = 800$

$$1. \text{ Mean} = A + \frac{\sum fd}{N} \times c$$

$$= 35 + \frac{30}{50} \times 10$$

$$= 35 - 6 = 29$$

$$\text{Mean} = 29$$

$$2. \text{ Mean deviation about Mean} = \frac{\sum |X - \bar{X}|}{N}$$

$$= \frac{800}{50} = 16$$

$$\text{M.D about Mean} = 16$$

**Question 3:**

Calculate the Mean deviation about the Median for the following data.

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	18	16	15	12	10	5	2	2

Soln.

Class	Frequency	CF	Mid-point X	X-median	F X-median
0-10	18	18	5	19	342
10-20	16	34	15	9	144
20-30	15	49	25	1	15
30-40	12	61	35	11	132
40-50	10	71	45	21	210
50-60	5	76	55	31	155
60-70	2	78	65	41	82
70-80	2	80	75	51	102
	N=80				$\sum X X - med $ =1182

$$1. \text{ Median} = l + \frac{\frac{N}{2} - M}{f} \times c$$

$$= 20 + \frac{40 - 34}{15} \times 10$$

$$= 20 + 4$$

$$\text{Median} = 24$$

2. Mean deviation about the median

$$\text{median} = \frac{\sum |X - \bar{X}|}{N}$$

$$= \frac{1182}{80}$$

$$= 14.78$$

**Question 4:**

Calculate the standard deviation for the following data

Class	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	2	8	20	35	20	15

Soln.

CL	f	Mid-point x	$\alpha = \frac{x - a}{c}$	d <sup>2</sup>	fd	fd <sup>2</sup>
10-15	2	12.5	-2	4	-4	8
15-20	8	17.5	-1	1	-8	8
20-25	20	22.5	0	0	0	0
25-30	35	27.5	1	1	35	35
30-35	20	32.5	2	4	40	80
35-40	15	37.5	3	9	45	135
	N= 100				$\sum fd=108$	$\sum fd^2=266$

$$\text{Standard deviation } \sigma = \sqrt{\frac{\sum fd^2}{N} - \left(\frac{\sum fd}{N}\right)^2} \times c$$

$$= \sqrt{\frac{266}{100} - \left(\frac{108}{100}\right)^2} \times 5$$

$$= \sqrt{2.66 - 1.1614} \times 5$$

$$= \sqrt{1.4936} \times 5$$

$$= 1.2222 \times 5$$

$$= 6.111$$

$$S.D \sigma = 6.111$$

**Question 5:**

The weekly salaries of a group of employees are given in the following table.

Find the mean and standard deviation of salaries.

Salaries	75	80	85	90	95	100
No. of persons	3	7	18	12	6	4



Soln.

Salaries	No. of persons	$\alpha = \frac{x - a}{c}$	$d^2$	$fd$	$fd^2$
75	3	-2	4	-6	12
80	7	-1	1	-7	7
85	18	0	0	0	0
90	12	1	1	12	12
95	6	2	4	12	24
100	4	3	9	12	36
	N=50			$\sum fd=23$	$\sum fd^2=91$

$$1. \text{ Mean} = A + \frac{\sum fd}{N} \times c$$

$$= 85 + \frac{23}{50} \times 5$$

$$= 85 - 2.3 = 87.3$$

Mean = 87.3 Rs.

$$2. \text{ Standard deviation } \sigma = \sqrt{\frac{\sum fd^2}{N} - \left(\frac{\sum fd}{N}\right)^2} \times c$$

$$= \sqrt{\frac{91}{50} - \left(\frac{23}{50}\right)^2} \times 5$$

$$= \sqrt{1.82 - 0.2116} \times 5$$

$$= \sqrt{1.6084} \times 5$$

$$= 1.268 \times 5$$

$$= 6.34$$

The standard deviation of salaries, S.D  $\sigma = 6.34$  Rs

## Unit 4

### Correlation Analysis

#### Part - A

##### Question 1:

Define rank correlation.

##### Ans: Rank correlation:

The rank correlation is one of the types of correlation which is also called as Spearman rank value. Rank correlation studies the relationship between different rankings on the same set of items. It deals with measuring correspondence between rankings.

The formula to compute Rank correlation is;

$$p = 1 - \frac{6\sum d^2}{n(n^2 - 1)}$$

d = rank of x – rank of y

n = No. of observations

##### Question 2:

Define Karl Pearson's coefficient of correlation.

**Ans:** Karl Pearson's coefficient of correlation is defined as a linear correlation coefficient that falls in the value range of -1 to +1. The value of -1 signifies a strong negative correlation while +1 indicates a strong positive correlation.

The formula for Karl Pearson's coefficient

$$r = \frac{\sum xy}{\sqrt{\sum x^2} \cdot \sqrt{\sum y^2}}$$

$x = x - \bar{x}$

$y = y - \bar{y}$

**Question 3:**

Write the types of correlation.

The types of correlation:

1. positive correlation
2. negative correlation
3. no correlation
4. simple correlation and multiple correlation

**Question 4:**

Find co efficient of correlation given  $\text{cov}(x, y) = -16.5$

$\text{Var}(x) = 2.89, \text{Var}(y) = 100$

Soln.

Given,

$\text{cov}(x, y) = -16.5$

$\text{Var}(x) = 2.89$

$\text{Var}(y) = 100$

The coefficient of correlation given by

$$r = \frac{\text{cov}(x, y)}{\sqrt{\text{Var}(x)} \cdot \sqrt{\text{Var}(y)}}$$

$$r = \frac{-16.5}{\sqrt{2.89} \cdot \sqrt{100}}$$

$$= \frac{-16.5}{1.7 \times 10}$$

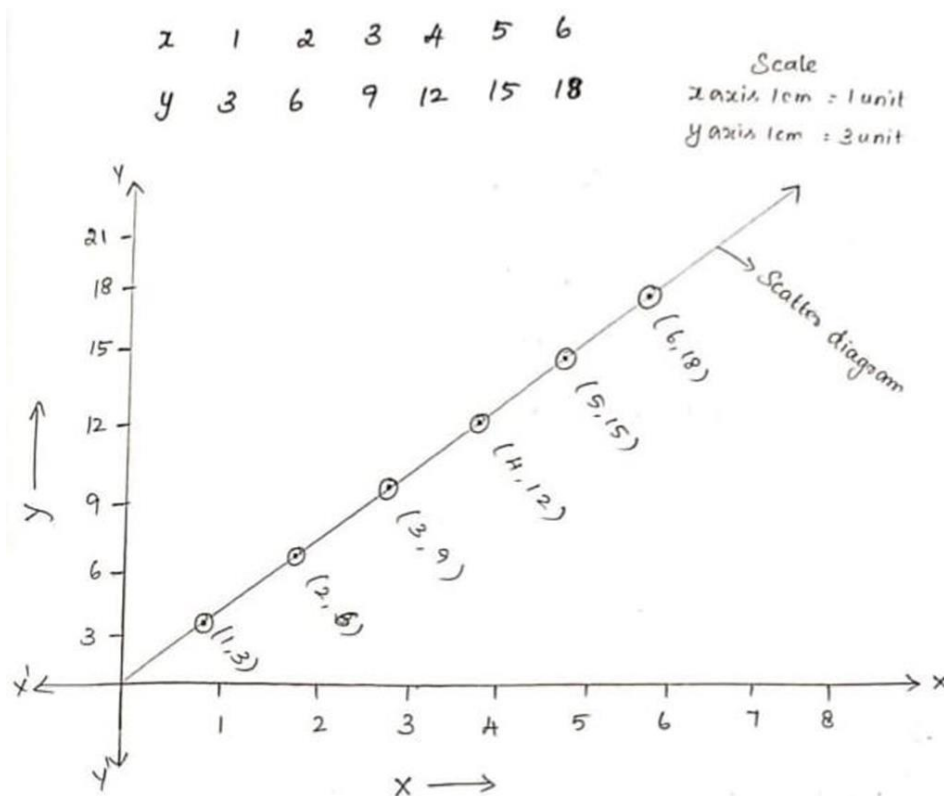
$$= \frac{-16.5}{17}$$

$$\therefore r = -0.9705$$

**Question 5:**

Draw a scatter diagram for the following data.

<b>X</b>	1	2	3	4	5	6
<b>y</b>	3	6	9	12	15	18



**Part - B**

**Question 1:**

Find the coefficient of correlation for the following data.

$$N=10, \sum x = 60, \sum y = 60, \sum xy = 305, \sum x^2 = 400, \sum y^2 = 580$$

Soln.

$$\text{Given, } N=10, \sum x = 60, \sum y = 60, \sum xy = 305, \sum x^2 = 400, \sum y^2 = 580$$

$$r = \frac{\sum xy}{\sqrt{\sum x^2} \cdot \sqrt{\sum y^2}}$$

$$= \frac{305}{\sqrt{400} \cdot \sqrt{580}}$$

$$= \frac{305}{20 \times 24.0831}$$

$$= \frac{305}{481.662}$$

$$r = 0.6332$$

**Question 2:**

Find the rank correlation coefficient for the following data.

<b>Rank in x</b>	1	2	3	4
<b>Rank in y</b>	3	4	2	1

Soln.

From table,

<b>Rank in x</b>	<b>Rank in y</b>	<b>d= Rx-Ry</b>	<b>d<sup>2</sup></b>
1	3	-2	4
2	4	-2	4
3	2	1	1
4	1	3	9
			$\sum d^2 = 18$

$$p = 1 - \frac{6\sum d^2}{n(n^2 - 1)}$$

$$p = 1 - \frac{6 \times 18}{4(4^2 - 1)}$$

$$= 1 - \frac{27}{15}$$

$$= 1 - 1.8$$

$$P = 0.8$$

**Question 3:** Write the properties of correlation coefficient.

**Ans:** The properties of correlation coefficient;

- The correlation coefficient is unaffected by the change of origin of reference and scale of reference.
- The value of correlation coefficient lies between -1 and +1 ( $-1 \leq r \leq +1$ ).

**Question 4:** Compute the coefficient of correlation between x and y from the following data.

<b>x</b>	1	2	3	4	5	6	7
<b>y</b>	9	8	10	12	11	13	14

<b>x</b>	<b>y</b>	<b><math>x^2</math></b>	<b><math>y^2</math></b>	<b>xy</b>
1	9	1	81	9
2	8	4	64	16
3	10	9	100	30
4	12	16	144	48
5	11	25	121	55
6	13	36	169	78
7	14	49	196	98
		$\sum x^2 = 140$	$\sum y^2 = 875$	$\sum xy = 334$

The coefficient of correlation;

$$r = \frac{\sum xy}{\sqrt{\sum x^2} \cdot \sqrt{\sum y^2}}$$

$$r = \frac{334}{\sqrt{140} \cdot \sqrt{875}}$$

$$= \frac{334}{\sqrt{11.8321} \cdot \sqrt{29.5803}}$$

$$= \frac{334}{349.997}$$

$$r = 0.9543$$

**Question 5:** The following are the ranks obtained by 10 students in statistics and mathematics.

Statistics	1	2	3	4	5	6	7	8	9	10
Mathematics	1	4	2	5	3	9	7	10	6	8

Find the rank correlation.

Soln.

Statistics Rx	Mathematics Ry	$d = Rx - Ry$	$d^2$
1	1	0	0
2	4	-2	4
3	2	1	1
4	5	-1	1
5	3	2	4
6	9	-3	9
7	7	0	0
8	10	-2	4
9	6	3	9
10	8	2	4
			$\sum d^2 = 36$

$$p = 1 - \frac{6\sum d^2}{n(n^2 - 1)}$$

$$p = 1 - \frac{6 \times 36}{10(10^2 - 1)}$$

$$p = 1 - \frac{6 \times 36}{10(99)}$$

$$p = 1 - \frac{24}{110}$$

$$= 1 - 0.2181$$

$$= 0.7819$$

**Part - C**

**Question 1:**

Calculate the Rank correlation coefficient for the following data.

<b>Group I</b>	1	2	3	4	5	6	7
<b>Group II</b>	4	3	1	2	6	5	7

Soln.

Group 1 Rx	Group 2 Ry	$d = Rx - Ry$	$d^2$
1	4	-3	9
2	3	-1	1
3	1	2	4
4	2	2	4
5	6	-1	1
6	5	1	1
7	7	0	0
			$\sum d^2 = 20$

$$p = 1 - \frac{6\sum d^2}{n(n^2 - 1)}$$

$$p = 1 - \frac{6 \times 20}{7(7^2 - 1)}$$

$$p = 1 - \frac{6 \times 20}{7(48)}$$

$$p = 1 - \frac{20}{56}$$

$$= 1 - 0.3571$$

$$= 0.6459$$

**Question 2:** In a contest two judges ranked eight candidates A, B, C, D, E, F, G and H in the order of their performance, as shown in the following table. Find the rank correlation coefficient.



Candidates	A	B	C	D	E	F	G	H
First judge	5	2	8	1	4	6	3	7
Second judge	4	5	7	3	2	8	1	6

Soln.

Candidates	First judge Rx	Second judge Ry	$d = Rx - Ry$	$d^2$
A	5	4	1	1
B	2	5	-3	9
C	8	7	1	1
D	1	3	-2	4
E	4	2	2	4
F	6	8	-2	4
G	3	1	2	4
H	7	6	1	1
				$\sum d^2 = 28$

$$p = 1 - \frac{6\sum d^2}{n(n^2 - 1)}$$

$$p = 1 - \frac{6 \times 28}{8(8^2 - 1)}$$

$$p = 1 - \frac{6 \times 28}{8(63)}$$

$$p = 1 - \frac{1}{3}$$

$$P = 1 - 0.3333$$

$$= 0.667$$

**Question 3:** The marks obtained by the student in physics and mathematics are as follows.

Marks in Physics	35	23	47	17	10	43	9	6	28
Marks in mathematics	30	33	45	23	8	49	12	4	31

Find the rank correlation

Marks in Physics(X)	Marks in maths(Y)	Rank in X (Rx)	Rank in Y (Ry)	d = Rx - Ry	d <sup>2</sup>
35	30	3	5	-2	4
23	33	5	3	2	4
47	45	1	2	-1	1
17	23	6	6	0	0
10	8	7	8	-1	1
43	49	2	1	1	1
9	12	8	7	1	1
6	4	9	9	0	0
28	31	4	4	0	0
					$\sum d^2 = 12$

$$p = 1 - \frac{6\sum d^2}{n(n^2 - 1)}$$

$$p = 1 - \frac{6 \times 12}{9(9^2 - 1)}$$

$$= 0.9$$

**Question 4:** Find the coefficient of correlation between x and y.

<b>x</b>	1	2	3	4	5	6	7	8	9
<b>y</b>	12	11	13	15	14	17	16	19	18

Soln.

x	y	x <sup>2</sup>	y <sup>2</sup>	xy
1	12	1	144	12
2	11	4	121	22
3	13	9	169	39
4	15	16	225	60
5	14	25	196	70
6	17	36	289	102
7	16	49	256	112
8	19	64	361	152
9	18	81	324	162
		$\sum x^2 = 285$	$\sum y^2 = 2085$	$\sum xy = 731$

$$r = \frac{\sum xy}{\sqrt{\sum x^2} \cdot \sqrt{\sum y^2}}$$

$$r = \frac{731}{\sqrt{285} \cdot \sqrt{2085}}$$

$$r = 0.9483$$

**Question 5:**

Calculate the coefficient of correlation between heights of father and son for the given data.

<b>Height of father X</b>	64	65	66	67	68	69	70
<b>Height of son Y</b>	66	67	65	68	70	68	72

Soln.

Height of father X	Height of Son Y	$x = X - \bar{X}$	$y = Y - \bar{Y}$	$x^2$	$y^2$	$xy$
64	66	-3	-2	9	4	6
65	67	-2	-1	4	1	2
66	65	-1	-3	1	9	3
67	68	0	0	0	0	0
68	70	1	2	1	4	2
69	68	2	0	4	0	0
70	72	3	4	9	16	12
$\sum x = 469$	$\sum y = 476$			$\sum x^2 = 28$	$\sum y^2 = 34$	$\sum xy = 285$

$$\bar{x} = \frac{\sum x}{N} = \frac{469}{7} = 67$$

$$\bar{y} = \frac{\sum y}{N} = \frac{476}{7} = 68$$

The correlation of coefficient is;

$$r = \frac{\sum xy}{\sqrt{\sum x^2} \cdot \sqrt{\sum y^2}}$$

$$r = \frac{25}{\sqrt{28} \cdot \sqrt{34}}$$

$$r = 0.8102$$

## Unit 5

### Probability

#### Part - A

##### Question 1:

How many committees of 4 people can be formed from a group of 10 people?

Soln.

Total No. of people;  $n = 10$

Committee members;  $r = 4$

$$\therefore nCr = \frac{n!}{(n-r)!r!} \Rightarrow 10C_4 = \frac{10!}{(10-4)!4!} = 21 \times 10 = 210$$

No. of ways to form a committee of 4 people is 210 ways.

##### Question 2:

Define conditional probability.

**Ans:** The conditional probability is the probability of happening of an event of A given that another event B has already occurred. In simple words, an event A is said to be a dependent event if the occurrence of A depends on another event B which has already happened. It is denoted as follows,

The conditional probability of event 'A' given that event 'B' has already taken place is denoted as,

$$P\left(\frac{A}{B}\right) = \frac{P(A \cap B)}{P(B)}, \quad \text{where } P(B) > 0$$

Similarly, the conditional probability of event 'B' given that event 'A' has already taken place is denoted as,

$$P\left(\frac{B}{A}\right) = \frac{P(B \cap A)}{P(A)}, \quad \text{where } P(A) > 0$$

**Question 3:**

If a coin is tossed twice, find the probability of getting at least one head.

Soln.

The possible outcomes of the coin are tossed twice

$$S = \{HH, HT, TH, TT\}$$

$$\therefore n(s) = 4$$

The favourable outcomes of at least one head.

$$P(A) = \frac{n(A)}{n(s)} = \frac{3}{4}$$

**Question 4:**

Define the probability density function (P.D.F).

The Probability Density Function (PDF) defines the probability function representing the density of a continuous random variable lying between a specific range of values. In other words, the probability density function produces the likelihood of values of the continuous random variable.

For, a continuous random variable  $x$  is denoted as,

$$f(x)dx - 1$$

$$\int_{-\infty}^{\infty} f(x)dx - 1$$

$$P(a \leq x \leq b) = \int_b^a f(x)dx = \text{Area under } f(x) \text{ from } a \text{ to } b, \text{ for any } a \text{ and } b.$$

**Question 5:**

The number of ways of selecting 2 white balls and 3 black balls out of 5 white and 6 black balls.

Soln.

No. of white balls = 5

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No. of black balls = 6

No. of ways =  $5C_2 \times 6C_3$

$$= \frac{5 \times 4}{1 \times 2} \times \frac{6 \times 5 \times 4}{1 \times 2 \times 3}$$

$$= 10 \times 20 = 200$$

*Total no. of ways = 200*

### **Part - B**

#### **Question 1:**

A perfect die is tossed twice. Find the probability of getting a total of 9. Soln.

The outcomes of a perfect die are tossed twice,

$$\therefore S = \left\{ \begin{array}{l} (1,1), (1,2), (1,3), (1,4), (1,5), (1,6), \\ (2,1), (2,2), (2,3), (2,4), (2,5), (2,6), \\ (3,1), (3,2), (3,3), (3,4), (3,5), (3,6), \\ (4,1), (4,2), (4,3), (4,4), (4,5), (4,6), \\ (5,1), (5,2), (5,3), (5,4), (5,5), (5,6), \\ (6,1), (6,2), (6,3), (6,4), (6,5), (6,6) \end{array} \right\}$$

$$n(s) = 36$$

Let A be the event of favorable outcomes of getting a total of 9.

$$A = \{(3,6), (4,5), (5,4), (6,3)\}$$

$$n(A) = 4$$

$\therefore$  The probability of getting a total of 9 is,

$$P(A) = \frac{n(A)}{n(S)} = \frac{4}{36} = \frac{1}{9}$$

#### **Question 2:**

State Baye's theorem.

**BAYE'S THEOREM:**

To prove Baye's Theorem we have to apply the theorem of total probability.

Theorem of Total probability:

If  $B_1, B_2, \dots, B_n$  are a set of exhaustive and mutually exclusive events and  $A$  is another event associated with  $B_1$  then,

$$P(A) = \sum_{i=1}^n P(B_i)P(\bar{B}_i)^A$$

Statement of Baye's Theorem

If  $B_1, B_2, \dots, B_n$  are mutually disjoint events with  $P(B_i) \neq 0 (i = 1, 2, \dots, n)$  for any arbitrary event  $A$  associated with  $B_i$

$$P(B_i / A) = \frac{P(B_i)P(A/B_i)}{\sum_{i=1}^n P(B_i)P(A/B_i)}$$

**Question 3:**

A number is chosen out of the number 1 to 100. What is the probability that it is a square number?

Soln.

The possible outcomes of sample space,

$$S = \{1, 2, 3, \dots, 100\}$$

$$\therefore n(s) = 100$$

*$\therefore$  The favorable outcomes of getting a square number.*

$$A = \{1, 4, 9, 16, 25, 36, 49, 64, 81, 100\}$$

$$n(A) = 10$$

*$\therefore$  The probability of getting a square number.*

$$P(A) = \frac{n(A)}{n(S)} = \frac{10}{100} = \frac{1}{10}$$

**Question 4:**

Three Horses A, B, and C are in a race, A is twice as likely to win as B, and B is twice as likely to win as

C. What are their respective probabilities of winning?

Soln.

$$P(A) = 2P(B)$$

$$P(B) = 2P(C)$$

$$P(A) = 2 \times 2P(C)$$

$$P(A) = 4P(C)$$

$$P(A) + P(B) + P(C) = 1$$

$$4P(C) + 2P(C) + P(C) = 1$$

$$7P(C) = 1$$

$$P(C) = \frac{1}{7}$$

$$P(A) + P(B) + P(C) = 1$$

$$P(A_1) + P(A_2) + \dots + P(A_n) = 1$$

$$P(A) = 4P(C) = 4 \times \frac{1}{7} \Rightarrow P(A) = \frac{4}{7}$$

$$P(B) = 2P(C) = 2 \times \frac{1}{7} \Rightarrow P(B) = \frac{2}{7}$$

**Question 5:**

A random variable x has the following probability density function

<b>X</b>	-2	-1	0	1
<b>P(X)</b>	0.4	k	0.2	0.3

Find the value of k and the mean value of x.



Soln.

Probability density function.

<b>X</b>	-2	-1	0	1
<b>P(X)</b>	0.4	k	0.2	0.3

$$1. \text{ W.K.T, } \sum_{i=1}^{\infty} P(x_i) = 1$$

$$0.4 + k + 0.2 + 0.3 = 1$$

$$K + 0.9 = 1$$

$$k = 1 - 0.9$$

$$k = 0.1$$

2. The mean value of x is

$$\sum xP(x) = E(x)$$

$$\text{The mean value of } x = \sum xP(x)$$

$$= (-2)(0.4) + (-1)(0.1) + (0)(0.2) + (1)(0.3)$$

$$= (-0.8) + (-0.1) + 0 + (0.3)$$

$$\text{The mean of } E(x) = -0.6$$

### Part - C

#### Question 1:

An integer is chosen at random out of the integers from 1 to 100. What is the probability that, it is:

(i) Multiple of 5, (ii) divisible by 7, (iii) greater than 70?

Soln.

The possible outcomes of sample space.

$$S = \{1, 2, 3, \dots, 100\}$$

$$n(s) = 100$$

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(i) The favorable outcomes of getting a multiple of 5,

$$A = \{5, 10, 15, \dots, 95, 100\}$$

$$n(A) = 20$$

The probability of getting a multiple of 5,

$$P(A) = \frac{n(A)}{n(B)} = \frac{20}{100} = \frac{1}{5}$$

(ii) The favorable outcomes of getting a divisible by 7.

$$B = \{7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91, 98\}$$

$$n(B) = 14$$

The probability of getting a divisible by 7,

$$P(B) = \frac{n(B)}{n(s)} = \frac{14}{100} = \frac{7}{50}$$

(iii) The favorable outcomes of getting a greater than 70,

$$C = \{71, 72, 73, 74, 75, 76, 77, 78, 79, 100\}$$

$$n(C) = 30$$

The probability of getting a greater, than 70,

$$P(c) = \frac{n(c)}{n(s)} = \frac{30}{100} = 0.3$$

**Question 2:**

A bag contains 4 white and 6 black balls, two balls are drawn at random. What is the probability that,

(a) both are white (b) both are black (c) one white and one black?

Soln.

No. of white balls = 4

No. of black balls = 6

Total No. of balls = 10

No. of balls drawn = 2

No. of ways the balls are drawn =  $10C_2$

a. No. of ways 2 white balls are drawn =  $4C_2$

The probability of getting two white balls

$$\frac{4C_2 \times 6C_0}{10C_2} = \frac{\frac{4 \times 3}{1 \times 2} \times 1}{\frac{10 \times 9}{1 \times 2}}$$

$$= \frac{2}{15}$$

$$\text{No. of ways for drawing two white balls} = \frac{2}{15}$$

b. No. of ways drawn 2 black balls =  $6C_2$

$$\text{The probability of getting both black balls} = \frac{4C_0 6C_2}{10C_2} = \frac{1 \times \frac{6 \times 5}{1 \times 2}}{\frac{10 \times 9}{1 \times 2}} = \frac{1}{3}$$

c. No. of ways drawing one white and one black =  $4C_1 \times 6C_1$

$$\text{The probability of getting one white and one black} = \frac{4C_1 6C_1}{10C_2} = \frac{4 \times 6}{\frac{10 \times 9}{1 \times 2}} = \frac{24 \times 2}{90}$$

$$= \frac{8}{15}$$

### Question 3:

State addition theorem, and,

$$\text{Given } P(A) = \frac{1}{4}, P(B) = \frac{1}{5}, (A \cap B) = \frac{1}{3}$$

Find  $P(A \cup B)$

Soln.

Addition Theorem:

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For any two events A and B in S

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

This is called the addition theorem

$$P(A) = \frac{1}{4}, P(B) = \frac{1}{5}, P(A \cap B) = \frac{1}{3}$$

$$P(A \cup B) = ?$$

By using addition theorem,

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$= \frac{1}{4} + \frac{1}{5} - \frac{1}{3} = \frac{7}{60}$$

$$P(A \cup B) = \frac{7}{60}$$

**Question 4:**

Three coins are tossed. Find the probability of getting.

(i) at least one head (ii) exactly 2 heads (iii) Exactly 3 tails.

The possible outcomes of getting three coins tossed, so the sample space is,  $S = \{HHH, HHT, HTH, HTT, THH, THT, TTH, TTT\}$

$$n(S) = 8$$

(i) The favorable outcomes of getting at least one head,  $A = \{HHH, HHT, HTT, THH, THT, TTH\}$   $n(A) = 7$

The probability of getting at least one head,

$$P(A) = \frac{n(A)}{n(S)} = \frac{7}{8}$$

(ii) The favorable outcomes of getting exactly 2 heads  $B = \{HHT, HTH, THH\}$

$$n(B) = 4$$

The probability of getting exactly 2 heads

$$P(B) = \frac{n(B)}{n(s)} = \frac{4}{8} = \frac{1}{2}$$

(iii) The favorable outcomes of getting exactly 3 tails,

$$C = \{TTT\}$$

$$n(C) = 1$$

The probability of getting exactly 3 tails,

$$P(C) = \frac{n(C)}{n(s)} = \frac{1}{8}$$

### Question 5:

A random variable  $x$  has the following probability density function.

Value of $x$	0	1	2	3	4	5	6	7	8
Probability of $P(x)$	a	3a	5a	7a	9a	11a	13a	15a	17a

(i) determine the value of 'a'

(ii) Find  $P(x < 3)$ ,  $P(x \geq 3)$ ,  $P(0 < x < 5)$

Soln.

Given P.D.F, from table,

Value of $x$	0	1	2	3	4	5	6	7	8
Probability of $P(x)$	a	3a	5a	7a	9a	11a	13a	15a	17a

(i)  $W.K.T, \sum_{i=1}^{\infty} P(x_i) = 1$

$$a + 3a + 5a + 7a + 9a + 11a + 13a + 15a + 17a = 1$$

$$81a = 1$$

$$a = \frac{1}{81}$$

(ii)  $P(x < 3) = P(x = 0) + P(x = 1) + P(x = 2)$

$$= a + 3a + 5a$$

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$$= 9a = \frac{9}{81} = \frac{1}{9}$$

$$(iii) P(x \geq 3) = P(x = 3) + P(x = 4) + P(x = 5) + P(x = 6) + P(x = 7) + P(x = 8)$$

$$= 7a + 9a + 11a + 13a + 15a + 17a$$

$$= 72a$$

$$= 72 \frac{1}{81}$$

$$= \frac{72}{81}$$

# Unit 1

## Part - A

### 1. What is meaning of office?

Office is a unit where relevant records for purpose of control, planning and efficient management of the organisation are prepared, handled and preserved. Office provides facilities for internal and external communication and coordinates activities of different departments of the organisation. The essential feature of the office is the work itself, not who does it or where it is done. If it is office or clerical work in one place, it is office or clerical work everywhere regardless of where the work is done or who does it.

### 2. What is office work?

Office work is mainly concerned with clerical work or paperwork. The office performs many services like communication, reproduction, mechanical data, processing, procuring of stationary, furniture and equipment, secretarial assistance etc. to other departments in an organisation.

Office is a unit where relevant records for the purpose of control, planning and efficient management of the organisation are prepared, handled and preserved.

### 3. What are the office activities?

1. To preserve all the records of the business
2. To handle incoming correspondence.
3. To plan the policies of the business and ensure their implementation.
4. To Direct and co-ordinate the activities of the various departments.
5. To maintain accounts, statutory and non-statutory books etc.

### 4. What is office management?

Office management as a task of planning, co-ordinating, motivating the efforts of others towards the specific objective in the office.

Management is the which leaves guides and directs and organisation accomplishment of a determined goal.

Management getting things done is one who accomplished the directing the efforts of others.

### 5. What is planning?

Planning process comprises determination and laying down of objectives, policies, procedures, rules, programmes, budget and strategies etc.

Planning is deciding in advance what is to be done. When a manager plans, he projects actions for the future achieve coordinated structure of operations aimed at the result.

## **Part - B**

### **1. What is office functions?**

The act of collecting, processing, storing and distributing information comprise functions of the office.

Functions of modern office can be divided into the following categories and they are:

#### **1. Basic or routine functions.**

#### **2. Administrative management functions or ancillary functions.**

The following basic functions of an office

1. To receive or collect information.
2. To Prepare a record of such information.
3. To process and arrange such information.
4. To supply readymade information to the authorities when asked for.

#### **1. To Receive or collect information:**

The primary function of the office is to receive information from the various departments of the organisation or from outside through enquiries, reports, orders, circulars, complaints messages etc.

#### **2. To prepare records of information:**

Information is usually received in the form of letters, enquiries, phone calls etc. and this information has to be converted into other forms, which can easily be followed by the management. These are orders, quotations, price-list, replies to enquiries and complaints, account books etc., within the organisation.

#### **3. To process and arrange information:**

The information received by office maybe lengthy and the same in its original form may not be much useful to the management.

Therefore, after collecting such information, it will be processed, categorised, arranged and systematically kept for readymade information.

Certain letters will have to be converted into charts, statements etc. by doing calculations or analysis over such information.



#### **4. To supply readymade information to the authorities:**

The office received information through letters, phones, meetings, complaints, business transactions, etc. These pieces of information's are further recorded in proper books processed and thus converted into charts, graphs, statements, diagrams etc. Which show the complete pictures of one type of dealings.

#### **Administrative and management functions:**

**1. Management functions:** The most important administrative functions of the manager includes planning, organising, staffing, directing, communicating, coordinating, motivating. The office manager must organised the office on modern lines for the efficient and effective performance.

**2. Development of office systems and procedures:** All the jobs in the office are interrelated and inter depended.

**3. Form designing and control:** information can be collected, recorder or processed systematically and effectively with the help of office forms. The task of the management to design and to control the forms.

**4. Personnel functions:** The personnel functions is performed by the personnel departments. It is assistant by the recruits and select the personnel. It places them in different jobs in the office For the efficient performance of the basic functions of the office, provision of adequate and trained staff is necessary. The staff must get reasonable salary.

#### **5. Controlling office costs:**

Office cost may be controlled by using machines in the office, using labour-saving devices and adopting improved method of Management.

**6. Public relations:** Public relations signify the relations of a business organisation with the general public, usually through the distribution of information. Public Relations guide business enterprise. Public Relations are guided by public opinions.

#### **2. What are the qualities good office manager?**

1. In addition to general education, must have undergone management training. The qualification are on the job he does.
2. he must have a good command of language.
3. He must be a good organiser.
4. He must have an ability to teach others.
5. He must be tactful and skilful in his dealings
6. He must be sincere to do his duties
7. He must be a good leader. He Mast be able to create Team Spirit.
8. He must have ability to delegate the job and work to his staff according to the abilities of the workers.

9. He must be calm and confident in all situations. He Should have self - control. He should not be irritable.
10. He must be constantly to touch with the new facts and methods to increase the efficiency.

### **3. What is elements of Management?**

The four elements of office management or

1. Purpose: The office manager must be fully aware of the aims and objectives of the organisation in order to make correct decisions. If he knows the purpose of office, he will provide direction to the office activities and thus make it easy to evaluate the performance of different individuals.
2. Environment: The office environment is not only the physical environment. But also the external factors such as the laws and Customs of the community within which the firm operates. Efficiency of office personnel upon the perfect understanding of office environment. the environment is always changing and the officer must take decision accordingly.
3. Personnel: It is the most important element. The office manager must select suitable personnel and place them in appropriaobjecti. They must be given proper training and then only they can increase their efficiency. To realise the desired objectives of the office, the personnel must be provided with sufficient incentive to motivate them to contribute their effects whether-heartedly.
4. Means: It is a tool and includes materials, methods, machines and equipment's with the help of which office activities are performed by the office employees. The office manager must know how to use these means in the best manner. The best use of means leads to greater efficiency and effectiveness in the work.

### **4. What is the functional organisation explain its advantages and disadvantages?**

Functional organisation is based on expert knowledge and makes the greatest use of division of labour resulting in higher efficiency and specialisation.

#### **Features:**

1. The whole after enterprise is divided into specialist functions.
2. Functions is performed by specialist.
3. The specialist in charge of functional department has the authority over all other employees for his function.
4. Specialist operate with independence.

#### **Merits of functional organisation:**

1. Greatest divisions of labour is possible

2. The system is based on expert knowledge
3. Functional efficiency of the workers can be maintained.
4. Production is made by standard initiation and specialisation.
5. Separation of mental and Manual function is possible.
6. Methods and operation can be standardized.

**Demerits of functional organisation:**

1. Too much experts under Bosses confusions in the mind of the worker.
2. It is difficult to fix responsibility on workers.
3. Discipline and moral of the workers are seriously affected, because of contract victory orders from different experts.
4. There are Heavy overhead expenses.

**What is centralisation and decentralization?**

Centralisation is the systematic and consistent reservation of authority at Central point within an organisation. Centralisation Increase the importance of the central authority in the organisation and reduces the importance of subordinates.

Centralisation is desirable in the planning and controlling of the management. It is desirable in the determination of objectives of the organisation. It is desirable in modernization, expansion or contraction of the business activities of the organisation.

**Advantages of centralisation:**

1. The manager of office can distribute the worker equally amongst the member of the staff.
2. Under centralisation, duplication of work and are eliminated, example, typewriter, duplicators, typist, stenos.

**Disadvantages of centralisation:**

1. If one requires any he will have to approach the central office. If the central office is far then there is a delay in getting the information.
2. the Section heads suffer from an inferiority Complex for every information, the central office is to be approach.
3. The central officer is overloaded it is possible that mistakes or errors will be creep it.

**Decentralization** means that systematic effort to delegate to the lowest levels all authority expert that which can only be exercised at the central points.

Decentralization of office means each department of the concern possesses its own office. There is no central office. Each department has Supervisors, typists, clerks, etc. There is a delegation of authority to the executive. Thus the authority to take decisions is delegated to the managers, purchase managers, sales managers, workers managers etc. The managers are responsible to their superiors.

**Advantages of decentralization:**

1. The chief executive of the firm will be free from the burden of overloaded problems arising in different departments.
2. Research can be facilitated to have more efficiency in production.
3. coordination takes place from the lower level which is preferred. In a centralised co-ordinate takes place at top level.

**Limitation of decentralization**

1. The operating cost is very high, because many persons are employed.
2. Coordination amongst the departments becomes a problem.
3. Change of uniformity action becomes less.

**Part – C**

**1. Briefly explain office functions?**

The act of collecting, processing, storing and distributing information comprise functions of the office.

Functions of modern office can be divided into the following categories and they are:

1. Basic or routine functions.
2. Administrative management functions or ancillary functions.

The following basic functions of an office

1. To receive or collect information.
2. To Prepare a record of such information.
3. To process and arrange such information.
4. To supply readymade information to the authorities when asked for.

To Receive or collect information:

The primary function of the office is to receive information from the various departments of the organisation or from outside through enquiries, reports, orders, circulars, complaints messages etc.

**2. To prepare records of information:**

Information is usually received in the form of letters, enquiries, phone calls etc. and this information has to be converted into other forms, which can easily be followed by the management. These are orders, quotations, price-list, replies to enquiries and complaints, account books etc., within the organisation.

### **3. To process and arrange information:**

The information received by office maybe lengthy and the same in its original form may not be much useful to the management. Therefore, after collecting such information, it will be processed, categorised, arranged and systematically kept for readymade information. Certain letters will have to be converted into charts, statements etc. by doing calculations or analysis over such information.

### **4. To supply readymade information to the authorities:**

The office received information through letters, phones, meetings, complaints, business transactions, etc. These pieces of information's are further recorded in proper books processed and thus converted into charts, graphs, statements, diagrams etc. Which show the complete pictures of one type of dealings.

### **Administrative and management functions:**

**1. Management functions:** The most important administrative functions of the manager includes planning, organising, staffing, directing, communicating, coordinating, motivating. The office manager must organised the office on modern lines for the efficient and effective performance.

**2. Development of office systems and procedures:** All the jobs in the office are interrelated and inter depended.

**3. Form designing and control:** information can be collected, recorder or processed systematically and effectively with the help of office forms. The task of the management to design and to control the forms.

**4. Personnel functions:** The personnel functions is performed by the personnel departments. It is assistant by the recruits and select the personnel. It places them in different jobs in the office For the efficient performance of the basic functions of the office, provision of adequate and trained staff is necessary. The staff must get reasonable salary.

**5. Controlling office costs:** Office cost may be controlled by using machines in the office, using labour-saving devices and adopting improved method of Management.

**6. Public relations:** Public relations signify the relations of a business organisation with the general public, usually through the distribution of information. Public Relations guide business enterprise. Public Relations are guided by public opinions.

### **2. Briefly explain functions of office management?**

Office management is similar to the general or administrative management, it performs the same functions as or performed by the management. The functions of office management is brief are given below

### **1. Planning:**

Planning is deciding in advance what is to be done. When a Manager plans, he projects a course of action for the future, attempting to achieve a consistent, co-ordinator structure of operations aimed at the desired results.

Planning process comprises determination and laying down of objectives, policies, procedures, rules programmes, budget and strategies etc.

#### **Benefits of planning**

1. The business objectives can easily be secured through plans.
2. Planning gives direction to activities in the office.
3. It facilitate the process of decision making.
4. It encourages sense of involvement and Team Spirit
5. It helps in economical operations.

### **2. Organising:**

Organisation is the process of identifying and grouping the work to be performed, defining and delegating responsibility and authority and establishing relationship for the purpose of enabling people to work most effectively together in accomplishing objectives.

**Steps of organisation:** The important steps involved in the process of on organisations are:

#### **1. Identification of activities:**

Organisation as a process of management is concerned with identifying and grouping of activities to be performed.

#### **2. Grouping of activities:**

Grouping may be done on several bases depending on the requirements of the situations. Such grouping of activities is called depart mentation.

#### **3. Assignment of duties:**

Assigning duties the requirements of the jobs and the competence of the individual should be properly matched together the process of assigning duties goes on till the last level of the organisation.

#### **4. Action of authority:**

Corresponding to the responsibility authority is delegated to the subordinates for enabling them to show work performance.

### **5. Fitting Individuals:**

Having determined the various parts and positions of the jobs to be done the next step will be to fixed table and well qualified persons in to these activities.

### **3. Staffing:**

Staffing is concerned with the requirement, selection, placement, training, development and growth of all those members of the organisation whose function is to get things done through the effects of other individuals.

Staffing is a forward-looking activity because tomorrow keeps coming today. Attraction constantly reduces executive ranks through retirement, death, resignation and occasional dismissal so young man keep moving up this most enterprise growth providing new opening for manager.

### **4. Directing:**

Directing is the managerial functions of guiding, inspiring, instituting and harnessing people towards the accomplishment of desired result.

Directing consists of following steps

1. Issuing orders and institutions to subordinates
2. Guiding and teaching the sub-ordinates the proper method of doing work
3. Supervising the work of subordinates to ensure that its conform to plan
4. Motivation of subordinates by providing incentives.
5. Motivating:

The term the motivation has been derived from the work motive. Motive is anything that initiates or sustains activity.

Motivation may be achieved by:

1. Providing inducements and incentives to employees
2. Keeping morals high.
3. Satisfying the needs of the employees.

### **6. Coordinating:**

Coordination involves the development of unity of purpose and the harmonious implementation of plans for the achievement of desired ends.

Arrangement of group efforts to provide unity of action for a common purpose. Thus coordination may be achieved by:

1. Simplified organisation
2. Harmonized Programmes and policies.
3. Well designed method of communication.
4. Voluntary cooperation.
5. Coordination through supervision
6. Clear cut objective.
7. clear definition Authority and responsibility
8. Effective leadership.

### **7. Controlling:**

Management controlling is the process by which manager assure that resource are obtained and used effectively and efficiently in the accomplishment organisation.

Basic elements of the control process:

1. Establishment of standards or adjectives.
2. Measurement of actual performance.
3. Comparing actual performance against the standard set.
4. Determining the reason for deviation.
5. Taking corrective action.
6. Feedback.
7. Communication :

Communication is the means by which behaviour is modified, change is affected, and goals are achieved. Communication is essential for effective control and motivation.

### **Briefly explain office manager?**

The manager plans, organises, directs and controls the activities of his subordinates in the organisation he brings the human resources or human talent of a firm into combination with non human resources Viz. Money, material and machine.

Functions of an office manager

1. Leadership: he has to control his office full office manager is important for the smooth running of the organisation he is in charge of the public relations he helps other departments to achieve their goals he has completed control over the work done in the office.
2. Co-ordination: he has to select the persons right persons for the right jobs.
  - a. He will have to work and carefully see that the policies laid down by the management or implemented
  - b. He is the connecting link between the top management under the workers.
  - c. His primary duty is to the management and secondary duty to the workers.
3. Recruitment of staff: he has to select the right person for the right job. For that he invites applications, contact interviews and select personnel



4. Training of staff: he provided training to the new employees as well as old employees to improve their skill in the latest techniques of Management.
5. Motivation: he measured the employees work and output and offers rewards which increase their efficiency and ensure their better cooperation and lead to the promotion of the staff.
6. Discipline: discipline in the offers depends upon him. The rules and principles of the management should be followed by the subordinates. He must have ability to speak.
7. Accounting: he has to keep a close touch with the accounting and costing section.
8. Controls stationary: she has to safeguard the furniture fittings machines equipment's and various type of records.
9. Secretarial service: he maintains accounts book holding meetings crafts reports and minutes those he does the secretary functions.
10. Organiser and supervisor: He organises and supervises the office correspondence, messenger Service, communication system, filling and indexing, production of records etc. There is no hard and fast rule as to the functions of on office manager. His functions depends upon the types and size of the organisation.

#### **4. Briefly explain office organisation?**

##### **Introduction To Office Organization:**

As size of the office is either small or large, it becomes necessary to organize the works or activities in order to achieve the specified objective effectively with minimum cost. Hence, the entire activities of the concern should be divided into many operations or functions (called departments). A proper arrangement of an organization along with office appliances will facilitate a speedy performance of office work. In this way, office organization is based on the organized routine and procedures and continuous flow of work.

##### **Meaning Of Office Organization:**

Office organization is a process of defining and grouping of office activities into main heads of functions, select suitable personnel, assign jobs to them and delegate authority to them for performing the jobs, coordinate the activities of different individuals and provide necessary facilities like forms, stationery, equipment, machines and suitable working environment to enable the persons to perform their work efficiently.

##### **Definition Of Office Organization:**

Office organization is defined as a process of defining and grouping the office activities and establishing the authority relationship among the employees who are working in an office so that they can be executed assigned activities effectively and economically.

##### **Characteristics Of Office Organization**

The characteristics of an office organization are listed below:

1. Fixing of responsibility on each office employee.

2. Assigning of work on the basis of competency of an office employee.
3. Avoiding the delay in doing the office work.
4. Completion of work as per the predetermined system and procedure.
5. Proper and adequate delegation of authority for doing work.
6. Providing adequate supervision for each work.
7. Exercise proper control over the office employees.
8. Proper supply of necessary forms and stationery for doing the work.
9. Effective utilization of available equipment and machines in an office.
10. Creating suitable working environment.

### **Steps Involved in Office Organization**

The following steps are involved in an office organization.

1. The first step is that an identification of office activities which are to be performed in order to achieve main objectives of the business organization.
2. Such identified activities are classified for facilitate the grouping of activities.
3. Then, all the identified activities are grouped on any one of the basis. The selection of basis is based on the nature of business organization. If the activities are grouped on functional basis, the departments or divisions are created on functional basis. For example, Production, Sales, Finance, Accounts, Personnel and the like.
4. The grouped activities are assigned to an individual or a group. Generally, production activities are assigned to production manager and production department. In this way, other grouped activities are assigned to each individual and a department. The responsibility is fixed at each level of all the departments.
5. Whenever, responsibility is fixed, there is a need of authority to perform the work. Hence, adequate authority is delegated to every manager for their respective department.
6. A proper organization structure is created in order to facilitate effective coordination of grouped activities both horizontally and vertically. Moreover, structural relationship is also clearly defined

### **5. Briefly explain office manuals?**

The office system when it takes the shape of a book is called office manual. The office manual contains the details of the work to be done in the office and other particulars of the concern. Generally it will be helpful to the Employees to understand the work without any delay. The office manual contains all the detail of the full office work.

#### **Types of office manuals:**

The main types of office manuals are given below:

1. Policy manual: It contains basic policies of the company. It describes the overall limitations within which managerial actions Can take place policy manual lay down the decision, resolutions and pronouncements of the board of directors records the policies of the company. The main objective of policy manual is to inform all the decision

makers recording their limits in the matter. This does not allow anyone to cross him limits and also provides guidelines.

2. Organisational manual: the organisational manual contain the organisational structures duties rights and powers of the official reliability of each one and mutual relationship between the two of the officials departments under their interrelationships.
3. Administrative practice manual: this manual contents of Administrative structure systems procedures method of work of each department in the organisation this also spells out the duties rights and responsibilities after departments constant this also give the performer records Britain's exit to be performed from time to time.
4. Departmental practice manual: it contains detailed information about the organisation policies and procedures of one department inter departmental relationships are also show one with the help of correct shorter and diagrams each diagram has its own manual.
5. Multipurpose manual: this type of manuals helps the management to explain the personnel policies rules and regulations to all employees and this type of manuals helps in limitations misunderstanding and friction between the management and employees. Purpose of office manuals: three purposes of office manuals or: to make instructions definite, to find answers in connection with procedures and to improve administrative control for the successful controlling office there must be completed and up to date office manual which inform the employees what they have to do when and how.

On office manual contents general information's General office rules and regulations safety instructions organisational policies job descriptions office facilities executive relationship standard practice and general instruction etc.

### **Advantages of office manual**

1. It is easy for the office manager to supervisor the work.
2. Doubts can be referred to office manuals
3. Changes can be made whenever necessary.
4. It includes delegations of authority along with assignment of job.
5. Expensive training is reduced.
6. The workers understood the work to be performed .
7. Responsibility can be fixed on individuals.
8. Good manuals lead to reduction of costs.
9. The employees can getting necessary information at anytime they want.

### **Disadvantages of office manuals:**

1. Office manuals for costly and time consuming.
2. It is difficult to keep manual up to date.
3. Describe teamwork because somebody's may not like the mutual relationships.
4. Emmanuelle maybe e MS interpreter if it is not written clearly.
5. Sometimes the details given in the manuals are inadequate or incomplete.

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## Unit 2

### Part - A

#### 1. What is Office accommodation?

Factors of office accommodation are location, layout, light, ventilation, office equipment's, undisturbed atmosphere etc.

office staff work efficiently if they are properly accommodated. suitable accommodation, modern equipment's and proper working condition are important factors in improving efficiency and reducing costs.

#### 2. What is office building?

Enterprises or business must select a proper location of the office building according to its requirement before finding out allocation it would be better to finalize the place as regarded to choose of urban or rural area. Office building was to locate in a quiet unhealthy neighbour hood from noise, dust, bad smell etc.

#### 3. What is office layout

Systematic and scientific arrangement of different departments and equipment's on a well defined plan so as to get the maximum benefit from this space available can be called as office layout. The office layout ensure an effective, steady and smooth flow of work.

#### 4. What are the types of lighting?

Lighting is most important consideration in a office a proper design system of lighting result in greater accuracy improve the quality of work and reduces cost Types of lighting  
1. Fluorescent light 2. Direct light 3. Indirect light 4. Individual desk light

#### 5. What is ventilation?

The office should be quite airy. fresh and nature air can be had only when there is a proper ventilation fresh air will reduce fatigue and remove the irritable feeling of the Clerks. low height of the office small or few Windows opening etc.,.

Obstruct the flow of air through the office. Artificial circulation of two cool or hot air will also cause irritation to the workers.

## Part - B

### 1. Explain about urban vs suburban location?

An urban area is the region surrounding a city. Most inhabitants of urban areas have non-agricultural jobs. Urban areas are very developed, meaning there is a density of human structures such as houses, commercial buildings, roads, bridges, and railways.

#### Merits:

- The staffs and the customer can easily reach the office because of the transportation facility prevailing in the city.
- It has facilities to make purchase and sales in a city rather than suburban area because city is have shops, post office, banks, insurance companies, government offices, sales tax office, income tax office will be convenient to make easy contact with such officers.

#### Demerits:

- the rent of building or the cost of contract construction of an office becomes heavy.
- the city are overcrowded expansion facility is also limited because of non availability of building High rent. city generally have dust, noise levels in atmosphere.

#### Suburban:

A suburban location means usually residential area or community outlying a city. suburbs The usually residential region around a major city

#### Merits:

- The wages of the labour will be low.
- there will be possibilities of expansion because of the space available the cost of living is low for the employees.

#### Demerits:

- There will be no proper transport and communication the electricity will not be available
- odd sales and purchase or not possible staff may not be willing to serve in rural area there will be delay in getting essential materials because shop may not be there

### 2. Explain about office building:

1. It is desirable to choose the location where same line of trade engaged
2. the locality must have adequate served by transport service
3. the locality must have a service facilities like Bank, post office, insurance etc.
4. office must be located near the source of availability of labour

5. cost should be minimum and efficient must be maximum
6. the location must provide healthy environment
7. if necessary the location of the office should be preferred near to other units like go down, branches, factories etc. for the better function
8. it should be ensured that municipality laws allowed the construction of the building according to the requirement of the company
9. the office building must be located in a quiet and healthy neighborhood from dust, noise bad smell etc.

### **3. Briefly explain office lighting:**

Lighting system is most important consideration in an office a proper design system of lighting result in great accuracy improve quality of work and reduces the cost. powerful light will also causes the trouble

The lighting is need not only to see but also to perform task efficiently insufficient and inadequate light causes the following.

**Delay:** more time will be spent on reading and writing

**Defect:** the quality of the output of the work performed in pool light will ridden with error. poor handling, poor alignment of lines and error will be high if the work is performed in an ill lit place

**Mental fatigue:** poor light will causes eye strain, fatigue and constant headache

Poor lighting will causes irritable mood and also leads to absenteeism. poor light will causes in less progress of work.

### **Points to remember**

- Good lighting facilitate and increased output efficiency and economically
- Lighting arrangement should be well designed
- if natural light is not available make proper supplement arrangement through artificial lighting
- Walls may be painted with suitable colours to increase the lighting

### **4. Characteristics of well defined the system**

- Every system has a goal well designed system is one which achieve the goal in a previously fixed time schedule
- A good system should be cost effective the cost of the operation should be much lesser than the cost of the objective
- A good system should function without unnecessary breakdown
- A well designed system should be simple in sense that its steps are easy to perform
- A well design system is well structured but should be flexible

- A well design system should be acceptable to the user of the system it should be user friendly it should not cause mental block.

### **5. Define types of noise**

Noise may be defined as an unwanted sound in and outside the office noise maybe and occasional or unusual loud sound or a constant loud sounded

There is internal noise as well as external noise

Internal noise created by the following:

1. Movement of machines
2. Movement and conversation of clerk, peon, visitor extra
3. Cracking doors.
4. Calling bell, telephone
5. shifting of furniture from one place to another

### **Measures to prevent internal noise**

1. Carpet or rubber mats or coir mat spread on the floor will reduce the sound caused by the movement of the clerk and other people
2. Below the office machine which create noise in operation, felt that can be placed which is reduce the noise
3. Calling bells can be replaced with the buzzers
4. Banking and cracking door should be fitted with rubber and felt stop to reduce sound. proper oiling of the door will reduce noise. automatic door springs, rubber pads etc can be fitted
5. Telephone may be kept in sound proof booth to reduce the sound

### **External noise**

external noise is caused by the street sound, workshop, noisy industrial process etc. This sound enter the office through open window and doors

### **Measures to prevent external noise**

1. As far as possible the location of the office should be away from the noise creating places
2. Door and window may be kept close
3. wall of the office should be made soundproof materials

## **Part - C**

### **1. Explain office layout**

Systematic and scientific arrangement of different departments and equipment's on a well defined plan so as to get the maximum benefit from this space available can be called as office layout. The office layout ensure an effective, steady and smooth flow of work.

1. Office layout should ensure an effective, steady and smooth flow of work. A straight line flow of work is preferred for the work will move forward from beginning to the end . It will increase the speed of work there is less danger of losing paper due to regularity it will keep clerks and executive at their desk and check unnecessary movements of paper and enable maximum control.
2. Arrangements of the department must facilitate speed and smoothness of the flow of work a proper and constant flow of work means that the work move from one operation to another through a system which will fetch high result
3. The reception list section must be near the main gate, door, entrance so that the customer may feel convenient and easy
4. Preferably the different section or departments of the office must be near to each other because the sections may be interconnected and one section cannot work without seeking or reference to the other department if the interlinked department are located far apart much time is wasted to go over and come back
5. The office of the secretary or general manager or section head whom outsider have to visit may be placed near the receptionist room so as to provide easy approach
6. While dividing the whole space, each department may be given adequate space so as to enable the clerk to work freely and move freely during the course of work
7. The office records, equipment's, machineries etc. May as far as possible be kept in their respective section this will facilitate to speed up the work if the files are the machine or kept at the place which is far off from this seat the employee will have to waste his time
8. Certain section such as interview section, enquiry section etc. dealing with the progress report of the staff etc., required privacy. these department or sections will be provided with privacy by allotting separate rooms
9. The position of the supervisors must be so adjust that they can easily observe the activities of their staff and watch whether they are engaged in work or chit chat.
10. The equipment's or machinery which make more noise in the operations should be placed away from the Clerks, who do paper work if space is not available soundproof walls or partitions must be erected to reduce the noise
11. there will also be noise from external sources if there is much disturbance, double glazed Windows or doors may be fixed
12. adequate facilities must be provided to the executive and the staff to work in comfort the facilities may also refer to systematic arrangement of furniture and good atmosphere
13. there must be sufficient natural or artificial lights.



## 2. Briefly explain kinds of lighting

Lighting system is most important consideration in an office a proper design system of lighting result in great accuracy improve quality of work and reduces the cost . powerful light will also causes the trouble

### Points to remember

- Good lighting facilitate and increased output efficiency and economically
- Lighting arrangement should be well designed
- if natural light is not available make proper supplement arrangement through artificial lighting
- Walls may be painted with suitable colors to increase the lighting

### There are two types of lighting

#### 1. Natural light

#### 2. Artificial light

Natural light is provided in day shift office through Windows North or West facing Windows will cause to prevent proper diffusion of sunlight

### Types of artificial light

fluorescent light: it was it is widely used and is popular we get diffused and scattered light electricity consumption is also low. In office it is good system of lighting it do not matter that the initial expenses are high

Direct light: the lamp is fitted against the ceiling with shades. it gives a direct downfall of light the ceiling portion will be in the dark this type of lighting system is giving place to fluorescent light Indirect light: this system is the reverse of the above the fittings or made facing the ceiling the fittings throw light upward and the ceilings reflected on the tables this system give unshaded lights without glare but for clerical work it is not advisable

Individual desk light: when a particular work required more light then and individual desk light can be provided in addition to common light it is expensive since the light is placed on a working table it causes fatigue and eye strain it is not common on present age

### Benefits of good lighting in an office area are:

- output can be increased
- quality of work can be increased
- eye strain can be reduced
- improve the moral of staff
- it create good impression on visitors

### **3. Explain ventilation**

The office should be quite airy, fresh and natural air can be had only when there is a proper ventilation a fresh air will reduce fatigue and remove the irritable feeling of the clerks. the low light of the office small or few Windows, opening to an arrow courtyard etc., abstract the flow of air through the office if the office has no free flow of air, particularly in a summer, workers get tired and fatigue and in rainy season they feel drowsy. this will leads to low efficiency of the clerks the artificial circulation of too cool or hot air will also causes irritation of the worker.

Adequate clean and fresh air or at the required temperature can help the clerk to do the work smoothly there may be many device to provide a comfortable atmosphere.

#### **There are two kinds of ventilation**

**1. Natural ventilation:** Natural ventilation is the process of supplying air to and removing air from an indoor space without using mechanical systems. It refers to the flow of external air to an indoor space as a result of pressure differences arising from natural forces. Natural ventilation can be ensured by providing lodge Windows roof ventilation or internal tube installation and they in proper position the circulation of air warm air essence and goes out through the ventilators and colder rushes in through the window but the window should face the direction of wind flow even if there is not added window and ventilation at least inhabitant stuff in the room

#### **2. Artificial ventilation**

Ventilation is provided with aid to make air circulation in order to days servants used to have fan with which they cause minor circulation of air around the persons of importance These days more efficient methods available due to invention of electricity fan, exhaust fan has been become a part of office and homes

Artificial ventilation is now provided by a combined system of plants such as ceiling fans, pedestal fans, exhaust fans or cooling fans are cooler can be used only in some places and they are unsuitable for seashore and humidity

Air conditioning the office is the thing now. it ensures dust free and cool atmosphere with the circulation of air in warm places. increase productivity enhance the quality of output and better health and comfort for personal and good image for the office are the advantages of air conditioning in an office.

Increases in output has been approved repeatedly and so many office has been restored to air conditioning their premises in cold places in olden days heater were used to keep the air warm

### **4. Explain about furniture**

office furniture is necessary a part of total environment in which an employee works

### The basic principle in selecting the furniture are

**Suitability:** the selected furniture must be suitable for the job

**Comfort:** the shape of the chair and table must be so designed that the worker would not feel any fatigue while doing their jobs this will result in efficiency and more output

**Design:** the decision regarding the choice of furniture like table, desk, chair etc., as to its size and design depend on the officer who used it

**Durability:** Metal furniture is most costly than the wood furniture but the maintenance charge of wood furniture or more less than the metal furniture it is more durable than wooden furniture moreover steel furniture is safe against fire.

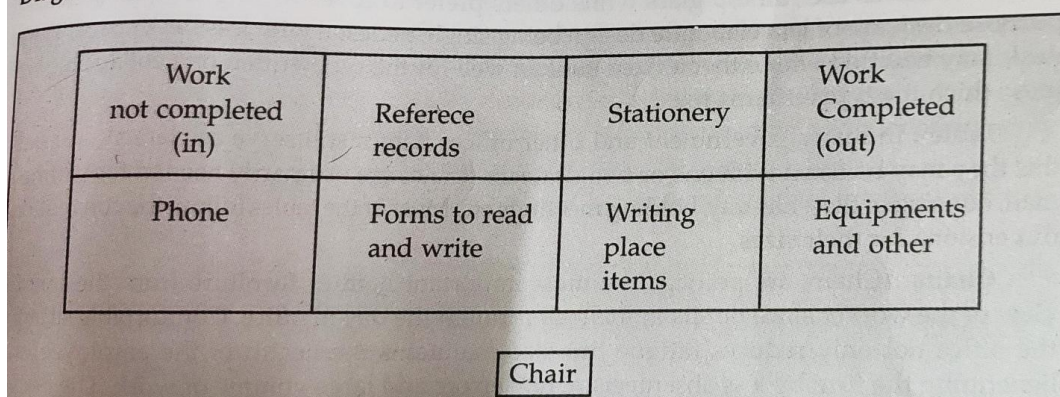
**Weight:** existing layout of the furniture has to be rearranged according to the required comfort. it is necessary to move the furniture from one place to another therefore it is better to have lightweight furniture if the furniture is light there will be less breakage and their and easy in shifting space-saving: furniture which would occupy minimum space should be selected cost: the cost of furniture should not be neglected when selecting it should be kept within the financial limit hygiene : outlay of the furniture should be so made that it will be easy to clean the furniture as well as floor usefulness: furniture should be selected according to the nature of particular job appearance: furniture should have good appearance and to be pleasing to the eyes multi purpose use: A furniture should be adaptable to multi purpose use wherever possible.

### Types of furniture:

#### Executive furniture:

Executive furniture is purchase according to the taste of the higher official this is mainly to impress the visitor and it should add to the prestige of the person using it generally executive included section manager and officer above them. Therefore different executive will prefer different type of furniture to suit that job and status.

Diagram of Executive Table



**Desk:**

The most important office work is handled on a desk, over desk or across a desk. the primary function of an any desk is to provide a suitable surface for writing, checking, sort an examining and conference

**Executive desk:** these are designed to suit individual taste and quite often they are designed as showpiece of an organization. executive desk are gently double pedestal general purpose desk are of less elaborated design being single pedestal with less disk space typist desk may be fitted with major a fixed into with a typewriter is fixed table are still serve a clerical desk and this may be fitted with one or two draw

chairs are the most important item of furniture from the point of the workers since he sit in them all through the day in office comfortable sitting in the office is not only reduces fatigue but also maintain the health of an employee.

**5. Briefly explain security and modern trends**

## Unit 3

### Part - A

#### 1. What is system concept?

According to Terry “system is a network of procedures which are integrated and designed to carry out a major activity”

A system is a planned approach to the activities needed to attain a desire objectives. A system means a pre- planned approach to the day-to-day work to attend the aimed goal a firm operation through systems again system indicates that right person should be choose for the particular jobs.

#### 2. What is procedure of system concept

- The office system should ensure smooth flow of work
- The system should eliminate duplication and redundancy of operations
- The office system should ensure smooth operation by reducing unnecessary movement of employees
- Introduction of specialisation for some operations at least
- Introduction of standardized procedures

#### 3. What is advantages of system analysis?

- Delay can be avoided
- Error can easily be eliminated
- Office efficiency is stepped up
- Office personnel can be easily trained
- Better control over work is facilitated

#### 4. What is limitations of office systems?

- The efficiency of the system depends on planning. If the planning is not done properly the whole systems would fail.
- Strict adherence to a system makes it inflexible and it may not work smoothly.
- The system may not be useful when changes take place.
- The efficiency of the system should be evaluated and decided by making a cost-benefit analysis of it. If the cost is more we cannot use that system.

#### 5. what is flexibility?

Organisation must be flexible so that it can be adjusted to changing conditions it must permit expansion, replacement, merger etc. it should not be rigid.

## **Part - B**

### **1. Explain system analysis.**

System analysis is the process of collecting and interpreting facts identifying the problem and decomposition of a system into its components as system analysis is conducted for the purpose of studying system or its parts in order to identify its objectives. It is a problem solving technique that improves the system and ensures that all the components of the system work efficiently to accomplish their purpose.

### **PRINCIPLES OF AN OFFICE SYSTEM:**

1. To avoid any interruption in the smooth running of office work.
2. To avoid duplication of work and records.
3. To avoid unnecessary movement of persons.
4. To avoid unnecessary writing.
5. To avoid using unnecessary forms.
6. To prepare the best use of specialization.
7. To adopt labour-saving machines.
8. To minimize the writing work of the staff.
9. To apply the principle of management by exception
10. To have simple, economic, efficient and practicable system and procedure.
11. To avoid unnecessary checking or verification.
12. To use simple forms to be filled in.
13. To avoid use of machines for personal gains.
14. To increase the efficiency of the office work.
15. To achieve goals at the minimum cost.

### **2. What are the Objectives of having office manual?**

1. Office manual ensures cost efficiency appal office operations they are achieve this by eliminating unwanted procedures by preventing waste of office time in frequent consultation and by providing for standardized procedure
2. Office manual precisely fix responsibilities on individual when responsibility are clearly fixed the individual can neither evade them. Thus the manual ensures discipline indirectly.
3. The manual provide for standardized procedure and they in turn ensures prevention of wastage of resources of energy and personnel
4. Office manuals ensure the easy adaptability of personnel on new jobs they aid training of employees
5. Office manual aid better cooperation and teamwork
6. Office manuals make it easy to continue the work of any individual in his absence due to unavoidable reason

### 3. What are the different approaches to work measure:

- Past performance method: Under this method past record about the performance of the worker on the job is methodically kept it is found out how much time does a normal worker take to complete a particular volume of work for example the output of the typist may be measured over a period of time on the basis of pages he typed in one day
- Time analysis method for time log method: Under this method a record of actual time spent and the unit of work done over a period of time by various employees is kept on the basis of this a time analysis list for the entire department is prepared
- Work sampling method: In work sampling method of measuring work a trained analyst first break down the various jobs which are to be studied the next step is to prepare a report about each individual employees to determine how he spend his time the analyst also record the number of items produced during a specific time. it may be that an efficient worker produce 10 units in 8 hour but of these 8 hour he spend 2 hour on gossips as the name work sampling methods are just analysis does not study each and every job he select a few sample and the base his contribution on those sample
- Motion study and time study: Develop the best way to do the work is found out by avoiding unnecessary movement in motion study analysis a job or an office procedure is divided into small operations and each operations is studied visually by mean of stopwatch To get more accurate results it is better to study movement by motion picture camera this is method known as micro motion study micro motion technique used to study office work to repeat and costly nature. Time study is the mean of measuring job performance in term of time its object is to establish the time required for the performing each operations at an average speed the purpose of time study is to find out the output of the worker of average skill under a normal conditions.
- Predetermined elemental time data: To standardise time study in relation to different kinds of job performed under same condition pre determined time data has been developed on assumption that is the same motion or used for the performing various jobs under same condition the standard time for this motion would be the same.

### 4. Explain departments of modern office:

General office: The general office deals with these office activities which are common to all the operating department, typing copying and duplicating section, correspondence section, mailing section, filing section and secretary department.

Purchase department: The department is responsible for different kinds of purchases assets, machinery, plans, consumable items like stationeries and raw materials for production. the other functions are receiving purchase, requisition inviting tender, placing order, receiving order items recording purchase details, issuing maintaining ledger and stock positions etc.

Sales department:

This department perform a number of functions:

- Advertising and publishing the firm's products Obtaining and trains Salesforce
- Receiving recording replies to customer enquiries complaints etc Activities relating to exhibition trade fairs

- Conducting market research survey etc
- Accounts department: To keep record of all financial transaction to deal with banks are maintained by accounts department.
- Personnel department: To select people for employment, to provide training to staff, to administrator wages and salaries policies, to keep personal record of staffs are done by personnel department.
- Production department: This department deals with production control, quality control, materials handling, stock control etc.,
- Export department: The function includes obtaining export orders, keeping liaison with importers, preparing export invoice, arranging insurance and shipment of goods.

#### **5. What is objectives of record management?**

1. Account of progress kept in an orderly way-to find out certain other facts history of the firm the past records history of the business recount the dealing are kept in an orderly way for the future reference
2. Proper study of the position of the -the preserved records or other contributory factors without which good and proper study of the position of the firm cannot be made and statement cannot be prepared
3. Comparison of the business (period wise state wise)-past record make it easy and possible to compare the performance of one period with that of another period one place with another one results with another by comparison one can know whether there is a progress or not
4. In case of dispute the need of referring to these records a documents of an arise for the settlement of disputes in transaction all information cannot be remembered
5. Policy making- past record ,event ,progress etc., are very necessary to decide future policies and plants in the absence of record the policies and plans may not be successful
6. legal requirement- certain records or to be kept for number of years from the legal point of view.
7. Evidence- records are good evidence in the count of law in case of suits.

#### **Part - C**

1. Briefly explain functions and responsibilities of system procedure department?

#### **INTRODUCTION TO OFFICE SYSTEM**

- An office has its own system to do office work. The reason is that volume of work of an office differ from another. System means a pre planned approach to do the day to day work to achieve the desired objectives of an organization.

Three factors are involved in doing office work. They are persons, forms and equipment. Hence, right types of persons should be selected. The standard forms are used to do the office work very effectively. The selected equipment should be standard one.



## MEANING OF OFFICE SYSTEM

Office system means planning of an office work systematically to achieve the main and subsidiary objectives of an organization within minimum efforts and costs.

**Definition of Office System:** An office system can be defined as an orderly arrangement of whole activities of an office and framing of procedures to be followed for the effective and economic performance of work.

## NEED OR IMPORTANCE OF SYSTEMS AND PROCEDURES

An office system is based on the nature of work performed and the extent of inter-linking among them. So, office system is required to achieve the following objectives.

1. **Improve Operating Efficiency:** Office system helps to avoid unnecessary motions there by improve the efficiency in the performance of work.
2. **Maintain Uniform Procedure:** Uniformity is maintained in the collection of dues from the debtors. Whenever, a default is made by the debtor, the same practice is followed while collecting the amount from them.
3. **Optimum Utilization of Resources:** The available resources of an office are equipment, (like computer type writer etc.) personnel, space, furniture and the like. These resources are properly utilized for performing office work in a planned and systematic manner.
4. **Reduce office Expenses:** Unnecessary motions are eliminated and standard automatic equipment and machines are also installed in an office. In this way, the office expense is reduced to some extent.
5. **Minimize the Operating Expenses:** Standard or maximum limit is fixed for each and every type of expenses. The actual expenses can be measured and compared with standard. Necessary steps can be taken to minimize the operating expenses, if needed.
6. **Fixation of Responsibility:** Works are assigned to the office personnel specifically. In this way, the responsibility is fixed for satisfactory performance.
7. **Facilitating the introduction of new checks:** Sometimes, duty lists can be prepared for office personnel separately and also included in the office manual. This process facilitates the introduction of new check system.
8. **Achieving Organization Goals:** The performance of any work leads to achievement of organization goals. Here, well designed office system helps to achieve organization goals in a better way.
9. **Simplify the training:** Office system clearly indicates degree of skill required to do a job. The result is selecting the best training requirements of office personnel.
10. **Errors Reduced:** A good office system can reduce the chances of errors and improve the overall efficiency of an organization.
11. **Smooth Running of an Office:** Delays and bottlenecks in the performance of work are reduced with the help of good office systems.
12. **Prevention of Fraud:** Office system includes internal verification or internal checking. Internal checking assists to prevent the frauds and exercise better control over work.
13. **Better Coordination:** Coordination is necessary among various sections or departments. The required coordination can be arrived by having good office system.

## **PRINCIPLES OF AN OFFICE SYSTEM:**

General principles of office system are listed below.

1. To avoid any interruption in the smooth running of office work.
2. To avoid duplication of work and records.
3. To avoid unnecessary movement of persons.
4. To avoid unnecessary writing.
5. To avoid using unnecessary forms.
6. To prepare the best use of specialization.
7. To adopt labour-saving machines.
8. To minimize the writing work of the staff.
9. To apply the principle of management by exception
10. To have simple, economic, efficient and practicable system and procedure.
11. To avoid unnecessary checking or verification.
12. To use simple forms to be filled in.
13. To avoid use of machines for personal gains.
14. To increase the efficiency of the office work.
15. To achieve goals at the minimum cost.

### **2. Define flow of work and roles of office manager systems and procedures**

Flow work is a concern with the way work moves along from one operation to another the quantity or volume of work gone through the rate at which it moves along and the smoothness of its passage the flow of work should be planned that there is no interruption in flow of work and there is no wastage of time of the staff waiting for the work.

Functions of an office manager

11. Leadership: he has to control his office full office manager is important for the smooth running of the organisation he is in charge of the public relations he helps other departments to achieve their goals he has completed control over the work done in the office.
12. Co-ordination: he has to select the persons right persons for the right jobs
  - a. He will have to work and carefully see that the policies laid down by the management or implemented
  - b. He is the connecting link between the top management under the workers.
  - c. His primary duty is to the management and secondary duty to the workers.
13. Recruitment of staff: he has to select the right person for the right job. For that he invites applications, contact interviews and select personnel
14. Training of staff: he provided training to the new employees as well as old employees to improve their skill in the latest techniques of Management.

15. Motivation: he measured the employees work and output and offers rewards which increase their efficiency and ensure their better cooperation and lead to the promotion of the staff.

16. Discipline: discipline in the offers depends upon him. The rules and principles of the management should be followed by the subordinates. He must have ability to speak.

17. Accounting: he has to keep a close touch with the accounting and costing section.

18. Controls stationary: she has to safeguard the furniture fittings machines equipment's and various type of records.

19. Secretarial service: he maintains accounts book holding meetings crafts reports and minutes those he does the secretary functions.

20. Organiser and supervisor: He organises and supervises the office correspondence, messenger Service, communication system, filling and indexing, production of records etc. There is no hard and fast rule as to the functions of on office manager. His functions depends upon the types and size of the organisation.

3. Briefly explain centralisation vs decentralization of system

COMPARISON	CENTRALIZATION	DECENTRALIZATION
Meaning	The retention of powers and authority with respect to planning and decisions, with the top management, is known as Centralization.	The dissemination of authority, responsibility and accountability to the various management levels, is known as Decentralization.
Involves	Systematic and consistent reservation of authority.	Systematic dispersal of authority.
Communication Flow	Vertical	Open and Free
Decision Making	Slow	Comparatively faster
Advantage	Proper coordination and Leadership	Sharing of burden and responsibility
Power of decision making	Lies with the top management.	Multiple persons have the power of decision making.
Implemented when	Inadequate control over the organization	Considerable control over the organization
Best suited for	Small sized organization	Large sized organization

**4. Briefly explain control of office system**

A system is a planned approach to activities necessary to attend the desired objectives and goals it is a group of interrelated components logically integrated towards the realisation of a common goal

- 1. Control should be acceptable to the subordinates:** Control systems which are not accepted will be evaded, cheated or manipulated to show management what they want to see.
- 2. Control should be understandable:** The individuals with the responsibility of monitoring operations and comparing them with established standards must understand clearly the control systems being used.
- 3. Control system should register the deviations quickly:** Control system must be designed in such a manner to identify the deviations quickly and to send the warning signal at the beginning stages of the deviation itself, so that remedial action could be taken for bringing forth the activities called for by the established standards.
- 4. Control should be economical:** It should not cost more than the worth of the process, which is to be controlled. The cost involved in developing and maintaining a control system should reflect the benefits they provide.
- 5. Control should be flexible:** As the environment in which organisation operates changes, the control system should be flexible enough to change with it. Such flexibility alone can allow the organisation to react quickly to changes or to take advantage of new opportunities.
- 6. Control must be designed to match the activity under consideration:** The data that is collected for operating the control system must be relevant to the activities, which it proposes to monitor.
- 7. Control must exist at strategic points:** Control must focus only upon critical areas, where any deviation from established standards would warrant costly remedial actions.
- 8. Control must measure accurately:** If the information provided to the management by control system is inaccurate, then a good decision would be a matter of choice. It would simply be a case of “garbage in garbage out”.
- 9. Control system should indicate corrective action:** Once deviations are detected, the control system should be capable of identifying causes for the variations and suggesting means of correcting them.

#### **5. Explain work measurement.**

Work measurement is the application of techniques designed to establish the time for a qualified worker to carry out a specified job at a defined level of performance.

- **Past performance method:** Under this method past record about the performance of the worker on the job is methodically kept it is found out how much time does a normal worker take to complete a particular volume of work for example the output of the typist may be measured over a period of time on the basis of pages he typed in one day

- Time analysis method for time log method: Under this method a record of actual time spent and the unit of work done over a period of time by various employees is kept on the basis of this a time analysis list for the entire department is prepared
- Work sampling method: In work sampling method of measuring work a trained analyst first break down the various jobs which are to be studied the next step is to prepare a report about each individual employees to determine how he spend his time the analyst also record the number of items produced during a specific time. it may be that and efficient worker produce 10 units in 8 hour but of these 8 hour he spend 2 hour on gossips as the name work sampling methods are just analysis does not study each and every job he select a few sample and the base his contribution on those sample
- Motion study and time study: Develop the best way to do the work is found out by avoiding unnecessary movement in motion study analysis a job or an office procedure is divided into small operations and each operations is studied visually by mean of stopwatch.
- To get more accurate results it is better to study movement by motion picture camera this is method known as micro motion study micro motion technique used to study office work to repeat and costly nature.
- Time study is the mean of measuring job performance in term of time its object is to establish the time required for the performing each operations at an average speed the purpose of time study is to find out the output of the worker of average skill under a normal conditions.
- Predetermined elemental time data: To standardise time study in relation to different kinds of job performed under same condition pre determined time data has been developed on assumption that is the same motion or used for the performing various jobs under same condition the standard time for this motion would be the same.

## Unit 4

### Part - A

#### 1. what is mail?

The mail or post is a system for physically transporting postcards, letters, and parcels. Written communication received through post office or messenger is termed as mail. If the firm received only a few letter a day and omission required to open them if the volume of the male is larger than the large openers or letter opening messenger used.

#### 2. What is record management?

Littlefield and Peterson, “record management can be described as the management control of records “records are very important in modern business to office is responsible for maintaining the records for future reference a good systematic preservation.

Record management involves much more than the methods of filing a systematic of classification importance of these or indexing, centre, filing, record retention follow-ups and micro photography all these receives attention in the present day office.

#### 3. What is filing?

A good and systematic preservation and maintenance of letters and records received and copies of outgoing correspondence for future reference known as filing. filing is nothing but a systematic record keeping filing is concerned with the work of arranging and preserving the records are copy of records kept in an organisation so that they are readily available when required.

#### 4. What is electronic communication system?

Electronic communications is the transmission, reception, and processing of information between two or more locations with the use of electronic circuits. The basic components of electronic communications system are the transmitter, communications channel or medium, receiver, and noise. Examples include the telegraph, telephones, radio, and space communications.

#### 5. What are the record retention?

Records retention is the term applied to the safeguarding of important records that document decisions, policies, financial activities and internal controls. They also document and maintain the University's history and activities. Historically records were paper but today also include text, video and audio files.

## **Part - B**

### **1. Explain record management process?**

Records management is the system used to control an organization's records from the creation of the record until the record is archived or destroyed. A records management process is comprised of identifying records, classifying records, and storing records, as well as coordinating internal and external access.

1. Identify the functions and activities for which each program is responsible and determine what records are needed to document those activities and functions.
2. Create sufficient records to document those activities and functions.
3. Maintain those records in a way that allows all persons who need access to find and retrieve what they need.
4. Remove or destroy records only with authorization; don't retain records authorized for destruction.
5. Keep official records separate from non-record materials.
6. Make someone responsible for the records program.
7. Transfer records identified as permanent.
8. Protect vital records appropriate to their value.
9. Protect records that contain security classified, confidential business, or other types of sensitive information with appropriate safeguards.
10. Do all of this in a manner that is as cost effective as possible.

### **2. Explain functions of filing system?**

Functions of filing can be classified into

- Information function records are protected and maintained to supply information.
- Administrative function files help the executive in framing business policies for the previous records or maintained.
- Library function the records are stored for future reference does it perform the library function.
- Historical function file preserve important records of the progress of business in a systematic manner thus it perform the historical function.

### **3. Explain fully essentials of characteristics of filing system:**

- Simplicity -it must be simple in operations so that every stops of the office can easily understand the filing system
- suitability- the filing system should be completely applicable to the firm concerned and so the nature and requirement of the business
- adaptability- the system must be adaptable to the changes that occur in a business
- economy- the cheap system of filing is to be adapted
- Protection- the file document must be available to the person who made them they are easily available when they are filed properly and securely
- less space- economy of space is the great important in all concern because of high rent

- accessibility- the file should be so arranged that require letter or document for reference be picked up without loss of time
- the guide-whenver the file or the document is taken out and indicator should be placed at the same place
- flexibility- if there is any expansion of work in the business concern then the filing system can be expanded so it must be flexible.

#### **4. What is a numerical calculation?**

Numerical classification in the system and number is allotted to each customer and the same number is put on all papers and documents relating to transaction with them the file is also number and the papers are filed on the basis of number. Thus number allotted to each correspondent become his file number if one file contain records of more person decimal numbers may be used example 21.1it is necessary to refer to an index does index cards are prepared and the file number written on them and arranged in alphabetical order in a safe place or a draw. whenever a file is needed one will concert the index card obtain the number of the file and then take out the file required.

Merits of numerical classification:

- accuracy in filing system is greater
- references made by numbers
- expansion facilities are there
- it is simple to understand
- if files or misplaced it can be noticed from promptly

Demerits of numerical classification:

- A separate index is must
- more time is required to locate a file one has to refer for the index and then search for the file
- transportation of figure causes mis- filings

#### **5. Explain methods of filing:**

Various methods of filing or based on different type of equipment's. There are two methods used old method and modern method.

##### **Old method:**

- Guard book-the method of Guard book is often used for recording minutes of voluntary association companies, government committees etc., in this method's all the letter or placed in the Guard book in chronological order to avoid possibilities of misplacement of any paper



- Spike or pillar file- lifted on a wooden desk which may be kept on the table or against the wall the paper or punched into a metal spike and made to rest on the desk this is a cheapest method of filing it is mostly used in small hotels
- Pigeonhole method -a cupboard is divided into a number of tiny compartments and each compartments is allotted to letter alphabetically

### **Modern filing method:**

- Flat or horizontal filing -under horizontal filing the paper or inserted in files or folders which are kept in a drawer in a horizontal position that is one upon the other. the paper or filed in a folder in chronological order files are placed one above the other day may be some difficulty in tracking the file whenever required (A) Flat files (B)Arch lever files.
- Vertical or upright filing- this is the most modern system of filing it has a grown essentially out of the drawback and defect of the horizontal method under which paper are so arranged that is impossible to refer to them at a short notice. Under this method the paper and the files containing them or placed vertically or in standing upright position. (A)folder (B)filing cabinet.

## **Part - C**

### **1. Briefly explain record management:**

Littlefield and Peterson, “record management can be described as the management control of records “records are very important in modern business to office is responsible for maintaining the records for future reference a good systematic preservation.

Record management involves much more than the methods of filing a systematic of classification importance of these or indexing, centre, filing, record retention follow-ups and micro photography all these receives attention in the present day office.

### **Objects of record Management:**

8. Account of progress kept in an orderly way-to find out certain other facts history of the firm the past records history of the business recount the dealing are kept in an orderly way for the future reference

9. Proper study of the position of the -the preserved records or other contributory factors without which good and proper study of the position of the firm cannot be made and statement cannot be prepared

10. Comparison of the business (period wise state wise)-past record make it easy and possible to compare the performance of one period with that of another period one place with another one results with another by comparison one can know whether there is a progress or not.

11. In case of dispute the need of referring to these records a documents of an arise for the settlement of disputes in transaction all information cannot be remembered

12. Policy making- past record, event, progress etc., are very necessary to decide future policies and plants in the absence of record the policies and plans may not be successful

13. legal requirement- certain records or to be kept for number of years from the legal point of view

14. Evidence- records are good evidence in the count of law in case of suits.

**Essentials of record management system:**

- Simplicity there should be simplicity in record keeping record should be maintained according to the requirement of the organisation so as to facilitate comprehension
- accuracy record should be preserved accurately so as to reduce the chance of errors and frauds
- economy the cost of maintaining and providing records is also an important factor which the office manager has to keep in mind.
- usefulness record should be useful for better management of the affair of the business record keeping should avoid retention of paper not needed.

**2. Briefly explain filing:**

According to Neuner and Keeling” filing is the systematic arrangement and keeping of business correspondence and records so that they may be found and delivered whenever needed for the future reference”

A good and systematic preservation and maintenance of letters and records received and copies of outgoing correspondence for future reference known as filing. filing is nothing but a systematic record keeping filing is concerned with the work of arranging and preserving the records are copy of records kept in an organisation so that they are readily available when required.

Functions of filing can be classified into

- Information function records are protected and maintained to supply information.
- Administrative function files help the executive in framing business policies for the previous records or maintained.
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- Historical function file preserve important records of the progress of business in a systematic manner thus it perform the historical function.

Methods of filing or based on different type of equipment’s. There are two methods used old method and modern method

**Old method:**

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**Modern filing method:**

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**3. Briefly explain classification arrangement of files:**

According to Neuner and Keeling" filing is the systematic arrangement and keeping of business correspondence and records so that they may be found and delivered whenever needed for the future reference"

Classification is the process of selecting headings under which the documents are group are classified on the basis of common characteristics before filing takes place there are

1. alphabetical classification
2. numerical classification
3. alphabetical or numerical classification
4. geographical classification
5. subject wise classification
6. chronological classification

**1. Alphabetical Classification:**

Under this system letters of filed in alphabetical order of the names of parties. this classification is most commonly followed of all the telephone directory files containing letters or arranged according to the alphabetical order. the first letter of the file may contain the paper of customers whose name begins with A those having their names begins with B

in another file and so on if there are more number under a dictionary method will be followed.

## **2. Numerical classification:**

Numerical classification in the system and number is allotted to each customer and the same number is put on all papers and documents relating to transaction with them the file is also number and the papers are filed on the basis of number. Thus number allotted to each correspondent become his file number if one file contain records of more person decimal numbers may be used.

example 21.1it is necessary to refer to an index does index cards are prepared and the file number written on them and arranged in alphabetical order in a safe place or a draw. whenever a file is needed one will concert the index card obtain the number of the file and then take out the file required.

## **1. The alphabetical and numerical classification:**

This is a combination of the alphabetic system and the numeric system in the system each letter or sub letter is given is own number and index card is placed behind the guide card for each alphabetical section the name and the number of a folder or mentioned in numerical order behind each card example A1 A2 A3.

## **2. Geographical classification:**

Geographical filing design arrangement of countries towns other areas in an alphabetical order it is convenient to use the geographical system for a major grouping and then introduction of alphabetic order this is a good system and is being adopted by concerned the area over which activities of the firm or credit by dividing into a number of region and the paper of filed on the basis of location

This is a system when a firm has many branches or business throughout the country this system is followed example- t Nagar, mount road, Anna Nagar....

## **3. Subject wise classification:**

This system is more important where subject matter will be given more weight than the name of the correspondent for example: main subjects classified into- (purchase, sales, promotions) subdivisions of classified subjects-( sales- cycle parts, sales -scooter parts, sales -motor parts )

## **4. Explain indexing:**

Indexing means to guide something some other information can be had through index and index is an indicator indicating any subject matter in filing index help the location of any letter records files except does it provide quick reference which is essential of a good filing system

### Methods of indexing:

- **Bound book indexing:** This system normally consists of a bound book each page of which is allotted to one letter or more letter of an alphabet each page of this book has tab which indicates the letter A letter of alphabetical allotted to it for example it is desired to see number of the pages in which the account of Mr.Anil is kept.
- **Vowel Index:** When the number of correspondence is very large the alphabetical Hindi indexing described above is further classified according to vowels. here each letter of the alphabet is subdivided into 6 division according to 5 vowels, that is a A,E,I,O,U and y if there are many numbers begins with some same alphabets there can be again sub divided on the basis of vowels. Example RAM name will be written on the page of the register marked RA The REKHA will be registered on the page of RE
- **Loose leaf indexing:** This is another method of book index loose leaf is a sheet ruled like a page of an ordinary index the sheet are inserted in or taken out from the metal hinges or screws as and when required it is arranged as the library card index system each person correspondences allotted a card on which the name of the person ,the address ,the file number etc., are entered the loose indicator are kept in a drawer.
- **Card index:** It is another method of preparing index the index is prepared in card each card is allotted for one information. Ticket may be of different colours for getting a good appearance for distinguishing one group of card from another it may be smaller than a postcard. this kind of indexing is mostly used in hospitals
- **Wheel index:** To increase the speed of reference further the latest development of index is used in wheel index .it is system according to which cards are mounted around the hub of the wheel. the wheel is moved or rotated on a ball bearing. when a particular file is needed the wheel is rotated and the require card is referred to this system is economically as well as flexible.

### 5. Briefly explain filing manual and record retention:

According to Neuner and Keeling” filing is the systematic arrangement and keeping of business correspondence and records so that they may be found and delivered whenever needed for the future reference”

- **Simplicity** -it must be simple in operations so that every stops of the office can easily understand the filing system
- **suitability**- the filing system should be completely applicable to the firm concerned and so the nature and requirement of the business
- **adaptability**- the system must be adaptable to the changes that occur in a business
- **economy**- the cheap system of filing is to be adapted
- **Protection**- the file document must be available to the person who made them they are easily available when they are filed properly and securely
- **less space**- economy of space is the great important in all concern because of high rent
- **accessibility**- the file should be so arranged that require letter or document for reference be picked up without loss of time
- **the guide**-whenever the file or the document is taken out and indicator should be placed at the same place

- flexibility- if there is any expansion of work in the business concern then the filing system can be expanded so it must be flexible.

**Record retention:**

Records retention is the term applied to the safeguarding of important records that document decisions, policies, financial activities and internal controls. They also document and maintain the University's history and activities. Historically records were paper but today also include text, video and audio files.

**Benefits of Having a Record Retention:**

By developing and implementing a record retention schedule

- Improve their overall utilization of resources
- Control the growth of records volume
- Demonstrate compliance with regulatory recordkeeping requirements
- Enforce the consistent implementation of record keeping policies
- Improve ability to locate and retrieve records when required

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