Biyani's Think Tank

Concept based notes

Cost and Management Accounting

BBA Part-III

Mr. B.N. Gaur
B..Com., MBA, PGDBM
Asst. Professor
Commerce & Management
Biyani Girls College, Jaipur

Published by :
Think Tanks
Biyani Group of Colleges

Sector-3, Vidhyadhar Nagar,
Jaipur-302 023 (Rajasthan)
Ph : 0141-2338371, 2338591-95 • Fax : 0141-2338007
E-mail : acad@biyanicolleges.org
Website :www.gurukpo.com; www.biyanicolleges.org

ISBN :

Edition : 2011
Price :

Leaser Type Setted by :
Biyani College Printing Department

Preface

I am glad to present this book, especially designed to serve the needs of the students. The book has been written keeping in mind the general weakness in understanding the fundamental concepts of the topics. The book is self-explanatory and adopts the "Teach Yourself" style. It is based on question-answer pattern. The language of book is quite easy and understandable based on scientific approach.

Any further improvement in the contents of the book by making corrections, omission and inclusion is keen to be achieved based on suggestions from the readers for which the author shall be obliged.

I acknowledge special thanks to Mr. Rajeev Biyani, *Chairman* & Dr. Sanjay Biyani, *Director* (*Acad.*) Biyani Group of Colleges, who are the backbones and main concept provider and also have been constant source of motivation throughout this Endeavour. They played an active role in coordinating the various stages of this Endeavour and spearheaded the publishing work.

I look forward to receiving valuable suggestions from professors of various educational institutions, other faculty members and students for improvement of the quality of the book. The reader may feel free to send in their comments and suggestions to the under mentioned address.

Author

SYLLABUS

Paper-IV : COST & MANAGEMENT ACCOUNTING

The Pattern of question papers shall be as under :
There shall be 7 questions in all. Question No. 1 and 2 will be compulsory.
Question No.1-20 marks : 10 very short answer type questions of 2 marks each (upto 50 words)
Question No. 2-20 marks: 5 short answer type questions of 4 marks each. (upto 100 words)
There shall be 5 essay type/numerical questions. Candidates shall be required to attempt any 3 questions. Each questions shall be of 20 marks.
Case study related questions may be asked wherever necessary.

1. **Introduction to Cost Accounting :** Meaning and definition, scope and use of cost accounting, cost centre, cost accounting and financial accounting, cost concepts, classification of costs.
2. **Elements of Cost:** Material,labour and expense,direct Material cost-Meaning,Purchase and stores routine, methods of Princing Material issues,wastage,scrap spoilage and defectives,Invenory Control techniques.direct labour cost-Meaning Remunertion methods,labour-turnover,treatments of idle time,overtime premium,Employee welfare costs and frige benefits.
3. **Overheads :** Introduction, diret expenses, steps in accounting of overheads, classification of overheads, techniques for separatin of fixed and vaniavle costs allocation and ipportionment of overheads, absorption of overheads - methods of overheads, absorption, overabsorption and under absorption of overheads.
4. **Costing methods :** Output costing, contract costing, service costing provess costing.
5. **Cot control Technques :**
   a. Budgeting Introductiion, comprehensive/master budget, fixed and flexible budgets.
   b. Standard costing: Introduction, Cost Variance analysis- material, lasbour and overhead variances.
   c. Marginal Costing and Manage

B-MANAGEMENT ACCOUNTING

6. **Introduction :**Management Process and Accounting, Managrial planning and control, scope and role of management accounting installation and opoeration cost.
7. **Statement of changes in financial position :** Introduction, fund flow analysis and cash flow analysis.
8. **Ratio Analysis :** Introduction, types of ratios, liqulity ratios, Leverage ratios, profitability ratios, activity ratios.
9. **Capital budgeting Techniques :** Introduction-Payback period method accounting rate of Return method, Net present value method, internal rate of retrun method, profitability.

C-INDEX METHOD

Risk Analysis in project decisions : Introduction, Business risk & financial risk, Sensitivity analysis, Simulation Standerd costing as on absolute measure of risk, Hilliers method of risk analysis

Contents

Theoretical Question

Q.1 What do you mean by Cost?

Ans. Cost means account of expenditure incurred upon manufacturing of an article or providing any service.

Q.2 What do you understand by costing.

Ans. Costing is the technique and process of determining cost.

Q.3 What is meant by cost accounting.

Ans. Cost accounting is the provision of such analysis and classification of expenditure as will enable to ascertain the total cost of any particular unit of production.

Q.4 Mention name of four product for which order for cost audit is issued.

Ans. (1) Cement Industry (2) Electric Industry
(3) Sugar Industry (4) Bactor Industry

Q.5 What is meant by supplementary cost?

Ans. Supplementary cost is the cost of product other than direct cost.

Q.6 What is opportunity cost?

Ans. The value of opportunity for gone is known as opportunity cost.

Q.7 Name four method of costing.

Ans. (1) Unit costing

(2) Operating costing

(3) Contract costing

(4) Process costing

Q.8 Explain Cost Unit?

Ans. Cost unit is a measurement of any goods or service e.g. per ton km. per unit.

Q.9 Explain term cost centre?

Ans. Cost centre is a location or item of any equipment which are connected with an undertaking for which cost are ascertained.

Q.10 Difference between costing & cost accounting.

Ans. (1) Costing is a dynamic technique in which changes may take place from time to time in comparison to cost accounting that enables to determine and control the cost of manufactured goods.

(2) Costing include determination of cost. Cost accounting include recording expenditure and income.

(3) Costing means technique for determination of cost whereas cost accounting means adoption of accounting system of cost.

Q.11 Give two items which are not include in cost.

Ans. Non cost items are profit on sale of fixed asset, goodwill w/o. discount on issue of share etc.

Q.12 What is the difference between cost of goods sold and cost of production.

Ans. Cost of production means prime cost + works overhead + office overheard while cost of goods sold means cost of production + opening stock of F.g. - closing stock of finished goods.

Q.13 Write two objective of material control.

Ans. (1) control cost of inventory.

(2) provide material at right time.

Q.14 What is normal wastage of material?

Ans. Normal wastage of material means any wastage due to normal reason like evaporation.

Q.15 What is abnormal wastage?

Ans. Any wastage arise due to abnormal. Reason like loss by fire, loss by earthquake.

Q.16 What is ABC technique?

Ans. It is a technique to control under these material classified three parts AB & C A include high value material B include. Medium value material and C include low value material.

Q.17 What is JIT purchase.

Ans. Under this technique no stock maintain and material purchase when having its demand.

Q.18 What is economic order quantity ?

Ans. Economic order quantity is that quantity of material where ordering & carrying cost minimum.

Q.19 What is meant by wages abstracts?

Ans. It is a statement and it include detail of wages prepare by cost department with the help of time card, wages sheet.

Q.20 What is idle time?

Ans. Idle time means no production hour but wages paid for that time.

Q.21 Name the method of giving remuneration to workers.

Ans. (1) Time rate method.

(2) Piece rate method.

(3) Piece rate with guaranteed pay rate

(4) Differential piece rate method.

Q.22 How labour separation rate is computed.

Ans. Labor turnover rate = $\frac{\text{no of spepratoin}}{\text{Avg No of workers}} \times 100$

Q.23 What do you understand by time study?

Ans. Time study is useful is determination of time require by an average worker in a Job.

Q.24 Write the formula of Halsey-weir premium plan.

AT X RATE + [30% of ts x rate]

Q.25 What is meant by overhead?

Ans. Indirect material indirect labour & Indirect expenses are known as Indirect overhead.

Q.26 Explain variable overhead.

Ans. The cost which increase according to production known as variable overhead.

Q.27 Explain semi variable overhead.

Ans. Overhead upto certain level fixed and after that variable known as semi variable overhead.

Q.28 In how many classes are the indirect expenses classified under the functional classification name them.

Ans. (1) Factory overhead.

(2) Office overheard

(3) Selling & Distribution overheard.

Q.29 State the name of four industries where unit costing is applied.

Ans. (1) Brick Industry

(2) Sugar Industry

(3) Steel industry

(4) Cement Industry

Q.30 What is meant by sub contract ?

Ans. When contractor assign a portion of contract to any other person for completion of that portion.

Q.31 What do you mean by cost plus contract?

Ans. Contract price is determined after adding a certain percentage of profit or certain amount of profit on actual cost.

Q.32 Explain escalation clause in the context of contract costing/

What is the importance of escalation clause?

Ans. Under this clause contract price will change in proportion to change in price of material labour & other expenses.

Q.33 What is meant by retention money?

Ans. In case of incomplete contract a part of the certified work is paid by the contractee to contractor. Rest of the amount is known as retention money.

Q.34 Mention the names of industries where process costing method may be used.

Ans. (1) Chemical industries

(2) Mining industries.

(3) Water & Gas Industries

(4) Electric supply

Q.35 Define joint product

Ans. Joint product is same type of product equal importance & value.

Q.36 What is scrap?

Ans. It is residue material from certain manufacturing operation

Q.37 What do you mean by abnormal effective.

Ans. When actual wastage is less than normal wastage then difference is termed as abnormal effective the balance transferred to P & L .

Q.38 Give basic formula for valuation of abnormal wastage and abnormal effective.

Ans. Cost P. U. $\frac{total\ cost - value\ of\ normal\ loss}{total\ unit - unit\ of\ normal\ wastage}$

Value of abnormal wastate = abnormal wastge x $cost\ P.U.$

Q.39 Give name of any five industries where operating costing method is used.

Ans. (1) Bus

(2) Hospital

(3) Water supply industry

(4) Canteen

Q.40 What do you meant by marginal costing?

Ans. Marginal costing is the ascertainment of marginal cost and its effect on profit of changes in value of type of output by differentiating between fixed cost and variable cost.

Q.41 Explain absolute tone kilometer

Ans. Journey from one station to another is treated as independent inurned distance is multiplied by weight total of all journey is absolute tone kilometer.

Q.42 What do you understand by commercial tone kilometer?

Ans. Commercial tone kilometer is compared by multiplying average weight by total distance of journeys.

Q.43 Why cost and financial accounts are reconciled?

Ans. Cost and financial accounts are reconcile. To verify the accuracy of both accounts.

Q.44. Explain two reason for difference in profit as per cost book and financial books

Ans. (1) it may be due to under/over absorption of overhead

(2) it may be due to valuation of stock

Q.45 What do you meant by marginal costing?

Ans. Marginal costing is mean ascertainment of marginal cost and its effect on profit of changes in volume of type of output by differentiating between fixed cost and variable cost.

Q.46 What do you mean by break even point.

Ans. Break even point is that point where no profit/ no loss. At this point contribution is just equal to fixed cost.

Q.47 Explain the meaning of profit volume ratio.

Ans. Also known as $PVR = \frac{C}{S} \times 100$

Q.48 State two factors effecting break even point.

Ans. (1) Increase in FC

(2) Decrease in FC

(3) Increase /Decrease in V.C

Practical Part

Problem 2.1 : The following information relating to a manufacturing company is given. Calculate Prime Cost.

	Rs.
Stock of Raw Material on 1.1.05	1,12,500
Purchases of Raw Material	2,38,500
Productive Wages	80,000
Chargeable Expenses	4,000
Non-productive Wages	20,400
Carriage on Raw material	5,000
Haulage (ढुलाई)	720
Stock of Raw Material on 31.12.05	1,02,000

Solution:

Statement of Cost

Particulars	**Rs.**	**Rs.**
Opening Stock of Raw Material	1,12,500	
Add: Purchases of Raw Material	2,38,500	
Add: Carriage on Raw Material	5,000	
	3,56,000	
Less: Closing Stock of Raw Material	1,02,000	
Raw Material Consumed		2,54,000
Productive Wages (Direct)		80,000
Chargeable Expenses (Direct)		4,000
Prime Cost		3,38,000

Problem 2.2: From the following particulars, prepare a cost statement showing components of Total cost and the Profit for the year ended 31st December, 1995:

	Rs.
Stock of finished goods 1 January, 2005	5,000
Stock of raw materials 1 January, 2005	45,000
Purchase of raw materials	4,50,000
Carriage inwards	5,000
Wages	1,80,000
Works Manager's salary	25,000
Factory employees salary	75,000
Factory rent, Taxes and Insurance	9,000
Power expenses	12,000
Other production expenses	45,000
General expenses	35,000
Sales for the year	9,00,000
Stock of finished goods, 31st December, 2005	20,000
Stock of raw materials, 31st December, 2005	40,000

Solution:

Statement of Cost

Particulars	Rs.	Amount in Rs.
Opening Stock of Raw Material	45,000	
Add: Purchases of Raw Material	4,50,000	
Add: Carriage inwards (on purchases)	5,000	
	5,00,000	
Less: Closing stock of raw material	40,000	
Raw Material Consumed		4,60,000
Direct Wages		1,80,000
Prime Cost		6,40,000
Add: Factory Overheads:		
Works manager's salary	25,000	
Factory employees salary	75,000	
Factory rent, taxes and insurance	9,000	
Power expenses	12,000	
Other production expenses	45,000	1,66,000
Works Cost		8,06,000
Add: Office Overhead: General expenses		35,000
Cost of Production		8,41,000
Add: Opening stock of finished goods		5,000
		8,46,000
Less: Closing stock of finished goods		20,000
Cost of goods sold		8,26,000
Profit (Balance)		74,000
Sales (given)		9,00,000

Problem 2.3: From the following Trading and Profit and Loss Account for the year ending 31st December, 1995 prepare a statement of cost:

Particulars		Rs.	Particulars		Rs.
To Opening Stock:					
Material	10,000		By Sales		25,00,000
Finished goods	15,000	25,000			
To Purchases of Material		7,50,000	By Closing Stock:		
			Material	90,000	
To Productive Wages		6,00,000	Finished Goods	15,000	1,05,000
To Power		75,000			
To Carriage Inward		10,000			
To Royalty		1,20,000			
To Cost of a special design		25,000			
To Gross Profit c/d		10,00,000			
		26,05,000			**26,05,000**
To Rent and Rates:					
Factory	35,000		By Gross Profit b/d		10,00,000
Office	25,000	60,000	By Interest on Loan		21,250
To Telephone Expenses		15,000	By Sales of scrap		3,750
To Advertisement		37,500	(at works cost)		
To Electricity:			By Dividend Received		10,000
Factory	22,500				
Office	15,000	37,500			
To Provision for Bad debts		50,000			
To Depreciation On:					
Plant and Machinery	30,000				
Delivery Vans	10,000	40,000			
To Income Tax		60,000			
To Salaries		1,25,000			
To Donations		35,000			
To Establishment Expenses		50,000			
To Depreciation on Furniture:					
Office	12,500				
Factory	10,000	22,500			
To Rent of warehouse		32,500			
To Net Profit		4,70,000			
		10,35,000			**10,35,000**

Problem 3.1: Two Materials X and Y are used as follows:

Minimum usage	:	50 units per week each
Maximum usage	:	150 units per week each
Normal usage	:	100 units per week each
Ordering quantity	:	X600 units; Y 1000 units
Delivery Period	:	X 4 to 6 weeks
		Y 2 to 4 weeks

Calculate for each material:

(a) Minimum Level

(b) Maximum Level

(c) Ordering Level

Solution:

(a) Minimum Stock Level = Re-order level - (Normal usage x Normal Reorder Period)

Minimum Stock Level (X) = 900 - (100 x 5)

= 900 - 500 = 400 units

Minimum Stock Level (Y) = 600 - (100 x 3)

= 600 - 300 = 300 units

(b) Maximum Stock Level = (Re-order Level + Re-order Quantity) -

(Minimum Usages x Minimum Re-order

Period)

= (900 + 600) - (50x4)

Maximum Stock Level (X) = 1500 - 200 = 1300 units

Maximum Stock Level (Y) = 600 + 1000) - (50x2)

= 1600 - 100 = 1500 units

(c) Ordering Level = (Maximum Usage x Maximum Re-order Period)

Ordering Level (X) = 150 x 6 = 900 units

Ordering Level (Y) = 150 x 4 = 600 units

Problem 3.2: In manufacturing its products a company was three raw materials A,B and C in respect of which the following apply:

Raw Material	Usage per units of Productions	Re order Quantity	Price Per Lbs.	Delivery Period	Order Level	Minimum Level
A	10	10,000	10	1 to 3	8,000	-
B	4	5,000	30	3 to 5	4,750	-
C	6	10,000	15	2 to 4	-	2,000

Weekly production varies from 175 to 225 units, averaging 200 what would you expect the Quantities of the following to be?

(a) Minimum Stock of A

(b) Maximum Stock of B

(c) Re-order Level of C

(d) Average Stock Level of A

Solution:

(a) Minimum Stock of A = Re-order Level - Normal Usage x Normal Re-order Period)

= 8,000 - 2,000x2)

= 8,000 - 4,000 = 4,000 Lbs.

(b) Maximum Stock of B = (Re-order Level + Re-order (Quantity) - (Minimum Usage x Minimum Re-order Period)

= (4,750 + 5,000) - (700 x 3)

= (9,750 - 2,100 = 7,650 Lbs.

(c) Re-order Level of C = Maximum Usage Maximum Re-order Period

= 1,350 x 4 = 5,400 Lbs.

(d) Average Stock Level of A = ½ (Minimum Stock Level + Maximum Stock Level)

= ½ (4,000 + 16,250)

= 10,125 Lbs.

Problem 3.3: A consignment consisted of two chemicals X and Y. The following details are extracted:

		Rs.
Chemical	X 800 Kg. @ Rs. 20 Per Kg. = 16,000	
	Y 500 Kg. @ Rs. 16 Per Kg. = 8,000	24,000
	Add: Railway Freight	1,820
	Add: Sales Tax	1,680

A shortage of 5% is expected on the basis of past experience. What rate would you adopt for pricing issues of these chemicals?

Solution:

Particulars	**Chemical X**		**Chemical Y**	
	Qty. Kg.	**Value Rs.**	**Qty. Kg.**	**Value Rs.**
Invoice Price	800	16,000	**500**	**8,000**
Add: Railway Freight		1,120		**700**
Sales Tax		1,120		500
Total	**800**	**18,240**	**800**	**9,260**
Less: Provision for Shortage @ 5%	40	-	**25**	**-**
Total	**760**	**18,240**	**475**	**9,260**
Rate of Issue per unit	1	24	**1**	**19.50**

Problem 4. The Personal department of a company gives you the following information regarding labour. Calculate labour turnover rate using the different methods.

No. of workers at the beginning of the years	2,000
No. of workers at the end of the year	2,400
No. of workers resigned	150
No. of workers discharges	70
No. of workers replaced due to quits and discharges	154
Additional workers employed	466

Solution:

Average number of workers employed in the year:

= 2,000 + 2,400/2 = 2,200

Calculation of Labour Turnover Rate:

(i) Separation Rate Method:

Labour Turnover Rate =

$$\frac{\text{No. of separation during a period}}{\text{Average number of workers employed during the same period}} \times 100$$

$$\frac{150 + 70}{2200} \times 100 = 10\%$$

(ii) Replacement Rate Method:

Labour Turnover Rate =

$$\frac{\text{No. of separation during a period}}{\text{Average number of workers employed during the same period}} \times 100$$

$$\frac{154 \times 100}{2200} = 7\%$$

(iii) Flux Rate Method

Labour Turnover Rate =

$$\frac{\text{No. of separations + No. of replacements}}{220 + \frac{154 \times 100}{2200}} \times 100 = 17\ \%$$

Problem 5. During one week the workman X manufactured 200 units. He received wage for a guaranteed 44 hours week at the rate Rs. 1.50 per hour. The time allowed to produce one unit is 18 minutes. Calculate his gross wages under each of the following methods of remunerating labour:

(a) Time Rate;

(b) Piece Rate with Guaranteed Weekly Wages;

(c) Halsey Premium Plan, 50% Bonus, and

(d) Rowan Premium Plan

Solution:

Calculation of Gross Wages

(a) Time Rate:

Total Earnings = Hours worked x Rate per hour

= 44x Rs. 1.50 = Rs. 66

(b) Piece rate with guaranteed weekly wages:

Time allowed per unit = 18 minutes

Standard production during one hour = 60 10

---- -------- units

18 3

Rate per hour = Rs. 1.50x 3

10

= 0.45

Total Earnings = Units produced x Rate per unit

= 200 x Re. 0.45 = Rs. 90

Since piece rate wages is more than time rate wages, the worker will get piece rate wages i.e. Rs. 90.

(c) Halsey Premium Plan, 50% Bonus:

Time allowed for actual production = 200 x 18 = 60 hours

60

Time taken for actual production = 66 - 44 = 16 hours.

Time taken for actual production = 44 hours

' Time saved = 66 - 44 = 16 hours.

Total Earnings = (Time taken x Rate per hour +

50% (Time saved x Rate per hour)

= (44 x Rs. 1.50) + 50% (16xRs. 1.50)

= Rs. 66 + Rs. 12 = Rs. 78

(d) Rowan Premium Plan:

Total Earnings = (Time taken x Rate per hour) +

(Time saved)/Time allowed x

Time taken x Rate per hour)

=(44xRs. 1.50)+(16x60x44xRs. 1.50)

Rs. 66 + Rs. 17.60 = Rs. 83.60

Problem 6. From the following annual charges incurred in respect of a machine in a shop where labour is almost nil and where work is done by means of five machines of exactly similar type and specifications, calculate machine hour rate for one machine.

1. Rent and Rate (Proportionate to the floor space occupied) for the shop 4,800

2.	Depreciation of each machine	500
3.	Repairs and maintenance for five machines	1,000
4.	Power consumed (as per meter) @ 25 paise per unit for the shop	5,000
5.	Electric charges for light in the shop	540
6.	There are two attendants for the five machines and they are each paid	Rs. 160 per month
7.	For the five machines in the shop there is one supervisor whose emoluments are	Rs. 500 p.m.
8.	Sundry supplies such as lubricants, cotton waste etc. for the shop	450
9.	Hire Purchase Installment payable for the machine (including Rs. 300 interest)	1,200
10.	The machine uses	10 units of power per hour.

Solution :

Computation of Machine Hour Rate

Items of Expenses	Total for 5 Machines	Amount for one Machine
	Rs.	Rs.
Standing Charges:	4,800	960
Rent and Rates		

Lighting	540	108
Supervision (500x 12)	6,000	1,200
Salary of Attendants (2 x 160 x 12)	3,840	768
Sundry Supplies	450	90
Total Standing Charges	**15,630**	**3,126**
Machine Expenses:		
Depreciation	2,500	500
Power	5,000	1,000
Repairs and Maintenance	**1,000**	**200**
Total Machine Expenses	8,500	1,700
Hurly Rate for Standing Charges (3,126x400)		7.82
Hurly Rate for Machine Expenses (1,700x400)		4.25
Machine Hour Rate		**12.07**

Notes:

(i) Machine operation hours have been calculated on the basis of consumption of power. The machine consumes 10 units of power per hour @ 25 paise per unit. It means the cost of power per hour is 10 x 25 paise i.e. Rs. 2.50 per hour. Since the total cost of power consumed for the year is Rs. 5,000/5 i.e. Rs. 1,000 for the machine, the machine operation hours are 1,2000/2.50 = 400 hours.

(ii) Salary of attendants has been treated as indirect since it has been apportioned amongst five machines.

(iii) Interest included in hire purchase installment, being a financial item, has not been included in cost.

Problem 7. A Production Department of a manufacturing company has three different machines, for each of which it is desired to establish machine hour rate. The overhead expenses for this department for the year ended 31st March, 1996 are:

	Rs.		Rs.
Consumable Stores:		Power	720
Machine No. 1	300	Heat and Light	400
Machine No. 2	500	Rent and Rates	2,400
Machine No. 3	600	Insurance of Buildings	200
Repairs and Maintenance:			
Machine No. 1	400	Insurance of Machine	480
Machine No. 2	600	Depreciation of Machines	7,200
Machine No. 3	800	Supervision	4,400
		General Charges	1,100

Additional information available are as follows:

	Effective H.P.	Area occupied (Sq.ft.)	Book Value of Machines	Working hours
Machine No. 1	5	100	12,000	1,000
Machine No. 2	10	500	20,000	2,500
Machine No. 3	15	400	16,000	2,000

You are required to calculate Machine Hour Rate for each of the three machines. Show clearly the basis of apportionment that you use.

Solution:

Computation of Machine Hour Rate

Items of Overhead	Total Amount	Basis of Allocation	Machine		
			No. 1	No. 2	No. 3
	Rs.		Rs.	Rs.	Rs.
Consumable Stores	1,400	Actual	300	500	600
Repairs & Maintenance	1,800	Actual	400	600	800
Power	720	Effective H.P.	60	300	300
Heat and Light	400	Area	40	200	160
Rent and Rates	2,400	Area	240	1,200	960
Insurance of Buildings	200	Area	20	100	80
Insurance of Machines	480	Book value	120	200	160
Depreciation of Machines	7,200	Book Value	1,800	3,000	2,400
Supervision	4,400	Area	440	2,200	1,760
General Charges	1,100	Area	110	550	440
Total Overhead			3,530	8,850	7,720
Working Hours			1,000	2,500	2,000
Machine Hour Rate (Rs.)			3.53	3.54	3.86

Notes:

(i) Effective hourse Power, for apportionment of power, has been calculated as follows:

Machine No. 1 : 5 x 1,000 = 5,000

Machine No. 2 : 10,2,500 = 25,000; and

Machine No. 3: 15x2,000 = 30,000. Thus, the ratio is 1 : 5 : 6

(ii) In the absence of any other information supervision and General Charges have been apportioned on the basis of 'area'

Problem 8.1: The following costing information is related to commodity 'X" for the year ending 31st March, 2006.

	Rs.		Rs.
Purchase of raw materials	2,40,000	Stock (31-3-96):	
Factory rent	16,000	Raw materials	44,480
Carriage inwards	2,880	Work-in-progress	40,000
Other factory overhead	80,000	Finished goods (4000 tons)	64,000
Direct wages	2,00,000	Sales-Finished goods	5,98,000
Stock (1-4-95)		Administration Overhead	8,000
Raw Materials	40,000	Selling Overhead Re. 1 per ton Sold	
Work-in-progress	9,600		
Finished goods (2000 tons)	30,000		

32,000 Tons of commodity were produced during the period. You are to ascertain (i) Prime Cost; (ii) Works Cost; (iii) Total Cost of Production: (iv) Gross Profit: and (v) Net Profit per ton.

Solution: Statement of Cost & Profit of Commodity 'x'

Particulars	**Rs.**	**Amount Rs.**
Opening stock 1-4-95	40,000	
Add: Purchases of Raw Materials	2,40,000	
Add: Carriage Inward	2,880	
	2,82,880	
Less: Closing stock 31-3-96	44,480	
(i) Raw Material Consumed		2,38,400
Add: Direct wages:		2,00,000
Prime Cost		4,38,400
Add: Factory Overhead:	16,000	
Factory Rent	80,000	96,000
		5,34,400
Add: Work-in-Progress (1-4-95)		9,600
		5,44,000
Less: Work-in-progress (31-3-96)		40,000
(ii) Factory Cost		5,04,000
Add: Administration Overhead		8,000
		5,12,000
Add: Opening stock of finished products (2000 tons)		30,000
		5,42,000
Less: Closing stock of finished products(4000 tons)		64,000
Cost of goods sold (30,000 tons)		4,78,000
Add: Selling Overheads:		30,000

Advertising, Discount and Selling Cost	
(30,000 tons @ Re. 1 per ton)	
Total Cost	5,08,000
Profit	90,000
	5,98,000

(iv) Gross Profit = Sales - Cost of goods sold

= 5,98,000 - 4,78,000 = Rs. 1,20,000

(v) Net Profit per ton $\frac{90,000}{30,000}$ = Rs. 3.00

Problem 8.2: A Factory produces a standard product. The following information is given to you from which you are required to prepare a cost sheet for the period ended on 30th June, 1996:

	Rs.
Opening stock of raw materials	20,000
Purchases of raw materials	1,70,000
Closing stock of raw materials	8,000
Direct Wages	40,000
Other direct expenses	20,000
Factory Overhead	100% of Direct wages
Office Overhead	10% of works cost
Selling and distribution expenses	Rs. 2 per unit sold

Units of finished product:

In hand at the beginning of period 2,000 (Value Rs. 32,000	
Produced during the period	20,000
In hand at the end of the period	4,000

Also find out the selling price assuming that profit is 20% of the selling price.

Solution :

Statement of Cost
(for the year ended 30th June, 1996)

	Rs.	Rs.
Opening stock of Raw Material	20,000	
Add: Purchases of Raw Material	1,70,000	
	1,90,000	
Less: Closing stock of Raw Material	8,000	
Raw Material Consumed		1,82,000
Direct wages		40,000
Direct expenses		20,000
Prime Cost		2,42,000
Add: Factory Overhead (100% of Direct wages)		40,000
Factory Cost		2,82,000
Add: Office Overhead (10% of Factory cost)		28,200
Cost of Production (20,000 units)		3,10,200
Add : Cost of Opening stock finished goods (2,000 units)		32,000
		3,42,000
Less : Closing stock of finished goods (3,10,200) x 4,000 / 20,000		62,040
Cost of Goods Sold		2,80,160
Add: Selling & Distribution Expenses (18,000 unit X Rs.2)		36,000
Total Cost		3,16,160

Add : Profit (20% on Sellin Price)	79,040
Selling Price	3,95,200
Selling Price per unit = Rs. 3,95,200 / 18,000	21.96

Problem 8.3: A Factory produced a standard product. The following information is given to your from which you are required to prepare the "Cost Sheet" of Product 'X' :

	Material Used :	Rs.
	In Manufacturing	11,000
	In Primary Packing	2,000
	In Selling the Product	300
	In Factory	150
	In Office	250
Labour - required :		
	In Producing	2,000
	For Supervision of Factory Management	400
Expenses :		
	Direct	1,000
Indirect :		
	Factory	200
	Office	250
	Depreciation - Factory	350
	Deprecation - Office Building and Equipment	150
	Selling Expenses	700

Freight on Sales	1,000
Advertisement	250

Assuming that all the units manufactured have been sold, also find out the selling price which may yield a profit of 25% on the selling price.

Solution :

Statement of Cost

Material Used in manufacturing	11,000	
Material used in Primary Packing	2,000	
Labour required in Producing (Direct)	2,000	
Direct Expenses	1,000	
Prime Cost		16,000
Add : Factory Overhead :		
Material used in Factory	150	
Supervision of Factory Management	400	
Factory Expenses (Indirect)	200	
Depreciation (Factory)	350	1,100
Factory Cost		17,100
Add : Office Overhead :		
Material used in Office	250	
Office expenses (Indirect)	250	
Dep. on Office Building & Equipments	150	650
Cost of Production		17,750

Add:	Selling Overhead		
	Material used in Selling	300	
	Selling Expenses	700	
	Freight on Sales	1,000	
	Advertisement	250	2,250
	Total Cost		20,000
Add:	**Profit (25% on selling price) (20,000 x 25)**		6,667
	100-25		
	Selling Price		26,667

Problem 9.1: The following information relate to contract. You are required to prepare the contract account and contractors account assuming that the amount due from contractee was duly received.

	Rs.		**Rs.**
Direct Materials	20,250	Tractor Expenses :	
Direct Wages	15,500	Running Material	2,300
Stores issued	10,500	Wages of Drivers	3,000
Loose Tools	2,400	Direct Charges	2,650

The contract was for Rs. 90,000 and the contract took 13 weeks in its completion. The value of loose tools and stores returned at the end of the year were Rs. 200 and Rs. 3,000 respectively. The plant was also returned at a value of Rs. 16,000 after charging depreciation is to be charge to contract @ 15% per annum. The administration and office expenses are 10% of works cost.

Solution:

Contract Account

	Rs.		Rs.
To Direct Materials	20,250	By Returned to Stores:	
To Direct Wages	15,500	Loose Tools	200
To Stores issued	10,500	Stores	3,000
To Loose Tools	2,400	By Plant returned (20,00-4,000)	16,000
To Tractor Expenses :		By Works Cost c/d	58,150
Running Material	2,300		
Wages of Drivers	3,000		
To Other Direct Charges	2,650		
To Plant (Cost)	20,000		
To depreciation on Tractor	750		
	77,350		77,350
To Works Cost b/d	58,150	By Contractee's A/c	90,000
To Administration & Office Expenses(10% on W.C.)	5,815		
To Profit & Loss A/c	26,035		
	90,000		90,000

Contractor's Account

To Contract A/c	90,000	By Bank A/c	90,000

Working Notes:

1. Calculation of original cost of Plant :

   Depreciated Value = Rs. 16,000

	Rate of Depreciation	=	20%
	Cost of Plant = Rs. 15,000 x 100/80	=	Rs. 20,000

2. Calculation of Depreciation on Tractor

Depreciation = Rs. 20,000 x 75 /100 x 13/52 = Rs. 750

Problem 9.2 : A building contractor having undertaken construction work at a contract price of Rs. 5,00,000 began the execution of the work on 1st April 1995. The following are the particulars of the contract upto 31st March, 1996:

	Rs.		Rs.
Machinery Installed	30,000	Work certified	3,90,000
Materials set	1,60,698	Cash received	3,60,000
Labour at site	1,48,750	Cost of work uncertified	9,060
Direct expenses	6,334	Materials in hand	3,766
Overhead charges	8,252	Wages accrued	5,380
Materials returned	1,098	Machinery at site	22,000

It was decided that the profit made on the contract in the year should be arrived at by deducting the cost of the work certified from the total value of the architect's certificates that 1/3 of the profit so arrived at should be regarded as a provision against contingencies and that such provision against contingencies should be increased by taking to the credit of the profit and loss account only such portion of the 2/3 profit as the cash received bears to the work certified. After taking into consideration the above, prepare contract account.

Solution :

Contract Account

For the year ended 31st March, 1996

Particulars	Rs.	Particulars	Rs.
To Materials sent	1,60,698	By Materials returned	1,098
To Labour at site	1,48,750	By Materials in hand	3,766
To Machinery installed	30,000	By Machinery at site	22,000
To Direct expenses	6,334	By work in progress :	
To Overhead charges	8,252	value of work certified	3,90,000
To Wages accrued	5,380	Cost work uncertified	9,060
To Total Profit c/d	66,510		
	4,25,924		4,25,924
To Profit & Loss a/c	40,929	By total profit b/d	66,510
To work-in-Progress a/c (Reserve)	25,581		
	66,510		66,510

Problem 10.1 : A product passes through two process viz. A and B prepare process accounts from the following:

	Process A Rs.	Process B Rs.
Input (in units 5,000)	5,000	--
Material consumed	6,000	3,000
Wages	7,000	4,000
Manufacturing expenses	2,000	2,000
Normal wastage	5%	10%
Scrap value of normal wastage (per 100 units)	16	20
Output (unit)	4,700	4,250

Solution :

Process 'A' Account

Output - 4,700units

Particulars	Unit	Amount Rs.	Particulars	Unit	Amount Rs.
To Input	5,000	5,000	By Normal wastage a/c @ Rs. 16	250	40
To Material Consumed	--	6,000	per 100 units (5% of 5,000 units)		
To Wages	--	7,000	By Abnormal wastage a/c @ Rs.	50	210
To manufacturing Exp.	--	2,000	4.20 per unit)		
			By Transfer to Process 'B' a/c Rs. 4.20 per unit	4,700	19,750
	5,000	**20,000**		**5,000**	**20,000**

टिप्पणी - Normal Production = Input - Normal wastage

= 5000 - 250 = 4750 units

Abnormal waster (per unit) = Normal Production - Actual Production

= 4750-4700 = 50 units

Cost of good production (per unit) = Normal Process cost / Normal Production

= 20,000 - 40 / 5,000-250 = Rs. 4.20

Normal Process Cost = Total Cost - Sale Value of Normal Waste

Normal production = Total input - Units of Normal waste

Process 'B' Account

Output - 4,250 units

Particulars	Units	Amount Rs.	Particulars	Units	Amount Rs.
To Transfer from process 'A' a/c	4,700	19,750	By Normal wastage a/c Rs. 20 per 100 units (10% of 4700 units)	470	94
'A' a/c	--		By Transfer to finished stock a/c @ Rs. 6.77 per unit	4,250	28,791.40
To Material consumed	--	3,000			
To Wages	--	4,000			
To manufacture expenses	--	2,000			
To Abnormal effectives a/c @ Rs. 6.77 per units	20	135.40			
	4,720	28,885.40			

टिप्पणी - Normal Production = 4,700 - 470 = 4,230 units

Abnormal effectives (in unit) = 4,250- 4,430 = 20 units

Cost per unit of good production = 28750-94/4700 = Rs. 6.77

Problem 10.2: A product passes through three process to completion. In January, 1996 the cost of production were as given below:

	Process I	Process II	Process II
Input (1,000 units)	Rs. 5,000	--	--
Direct Material	Rs. 2,000	3,020	3,462
Wages	Rs. 3,500	4,226	5,000
Production overheads	Rs. 1,500	2,000	2,500
Normal wastage	10%	5%	10%
Scrap value of normal wastage (per unit)	Rs. 3	5	6
Actual output (units)	920	870	800

Prepare the necessary accounts.

Solution :

टिप्पणी -

	Process I	Process II	Process II
Input (in units)	1,000	920	870
Normal wastage (10%, 5%, 10% of input)	100	46	87
Normal Production	900	874	783
Actual Production	920	870	800
Abnormal Wastage of effectives	20(effec.)	4(was.)	17 (eff.)

Cost per unit of good production

= 12,000 - 300 ; 21,206-230; 31,842-522

1,000-100 920-46 870-42

= Rs. 13; Rs. 24; Rs. 40

Process 'I' Account

Output - 920 units

Particulars	Units	Amount	Particulars	Units	Amount
To Input	1,000	5,000	By Normal wastage @	100	300
To Direct Materials	--	2,000	Rs. 3 per unit		
To Wages	--	3,500	By Transfer to Process II a/c @ Rs. 13 per unit	920	11,960
To Production overheads	--	1,500			
To Abnormal effectives	20	260			
	1,020	**12,260**		**1,020**	**12,260**

Process 'II' Account

Output - 870 units

Particulars	Units	Amount	Particulars	Units	Amount
To Transfer from Process I a/c	920	11,960	By Normal wastage @ Rs. 5 per unit	46	230
To Direct Material	--	3,020	By Abnormal wastage a/c Rs. 24 per unit	4	96
To Wages	--	4,226			
To Production overhead	--	2,000	By Transfer to Process III a/c @ Rs. 24 per unit	870	20,880
	920	**21,206**		**920**	**21,206**

Process 'III' Account

Output - 800 units

Particulars	Units	Amount	Particulars	Units	Amount
To Transfer from Process II a/c	870	20,880	By Normal wastage @ Rs. 3 per unit	87	522
To Direct Materials	--	3,462	By Transfer to Process II a/c @ Rs. 13 per unit	800	32,000
To Wages	--	5,000			
To Production overheads	--	2,500			
To Abnormal effectives @ Rs. 40 per unit	17	680			
	887	**32,522**		**1,020**	**12,260**

Problem 11.1: From the following information, you are required to calculate the cost of running a motor truck per tonne-kms.

Total tonnage carried in week : 30 tons

Total Kilometers run in a week : 1,000 Kms.

Details of the above are as follows:-

Day	**Kilometers**	**Tons**
Monday	250	6.0
Tuesday	200	5.0
Wednesday	200	4.5
Thursday	100	5.5
Friday	150	5.0
Saturday	100	4.0
	1,000	30.0

Expenses for the week are as follows :

Driver's Salary	Rs. 1,200 per month
Cleaner's Salary	Rs. 960 per month
Diesel, Oil etc.	60 paise per km.
Repairs & Maintenance	Rs. 1,200 per month
Depreciation	Rs. 19,200 per month
Other Expenses	Rs. 800 per month

You may assume four weeks in a month for your calculations.

Solution :

Operating Cost Sheet for a week

			Rs.
(A)	Fixed Expenses :		
	Driver's Salary (1200/4)		300
	Cleaner's Salary (960/4)		240
	Other's Expenses (800/4)		200
		(A)	740
(B)	Variable Expenses :		
	Petrol, Diesel, Oil etc. (0.60 x 1,000)		600
	Repair & Maintenance (1200/4)		300
	Depreciation (19,200/12) ÷ 4		400
		(B)	1,300
	Total Overhead (A+B)		2,040
	Effective ton - kms		5,100
	Rate per ton-km. (Rs. 2,040/5,100)		0.40

टिप्पणी – टन किलोमीटर का परिकलन निम्न प्रकार किया गया हैं –

Monday	250 X 6.0 =	1,500
Tuesday	200 X 5.0 =	1,000
Wednesday	200 X 4.5 =	900
Thursday	100 X 5.5 =	550
Friday	150 X 5.0 =	750
Saturday	100 X 4.0 =	400
Total Ton Kms.		5,100

Problem 11.2: A Transport Company maintains a truck for carrying goods from Jaipur to Bhilwara 270 kms. off. It operates for 26 days on average in a month. Every day it starts from Jaipur with a load of 8 tonnes and returns from Bhilwara with a load of 4 tonnes. The detail of expenses are as follows :-

Depreciation	Rs. 6,000 per month
Diesel & Oil	Rs. 24,000 per month
Driver's Salary	Rs. 1,600 per month
Cleaner's Salary	Rs. 800 per month
Garage Rent	Rs. 4,800 per month
Repairs & Maintenance	Rs. 48,000 per month
Taxes and Insurance	Rs. 24,000 per month

Solution :

Operating Cost Sheet

		Rs.
(A)	**Fixed Expenses :**	
	Taxes & Insurance (24,000/12)	2,000
	Driver's Salary	1,600
	Cleaner's Salary	800
	Garage Rent (4,800/12)	400
	Total Fixed Expenses	**4,800**
(B)	**Variable Expenses :**	
	Repair & Maintenance (48,000/12)	4,000
	Depreciation	6,000
	Diesel & Oil	24,000
	Total Variable Expenses	**34,000**
(C)	Total Opening Cost (A+B)	38,800
(D)	Cost per ton - km. (38,800/84,240)	0.46

टिप्पणी – 1. टन, किमी. की गणना निम्न प्रकार की गई है –

जाते समय 270 किमी. X 8 टन X 26 दिन	=	56,160
आते समय 270 किमी. X 4 टन X 26 दिन	=	28,080
कुल टन किमी.	=	**84,240**

Problem 11.3 : From the following particulars, calculate the rate to e charged per passenger km. to earn 30% profit on net takings. The bus has capacity to 50 persons.

(a) **Delhi to Chandigarh and back** (on the same day)

Distance covered	150 km. each way
No. of days run	10
Occupancy Ratio	90%

(b) **Delhi to Agra and back** (on the same day)

Distance covered	120 km. each way
No. of days run	10
Occupancy Ratio	80%

(c) **Local Trips** (within Delhi)

No. of days run	4
Average distance per day	40 Kms.
Occupancy Ratio	112.5%

Additional Information :

Cost of Bus	Rs. 1,50,000
Depreciation	40% p.a
Salary of drier	Rs.800 p.m.
Salary of Conductor	Rs. 600 p.m.
Salary of Accountant - cum Manager	Rs. 600 p.m.
Shed Rent	Rs. 600 p.m.

Insurance at 5% per annum on insured value of Rs. 1,20,000

Diesel Consumption	3 Kms. per litre at a cost of Rs. 3 per litre
Road Tax	Rs. 600 per annum per seat
Lubricants	50% of Diesel Cost
Repairs and Spares	Rs. 24,000 p.a.
Permit and Licence Fees	Rs. 1,200 p.m
Passenger Tax	at 15% of the total takings

Solution :

Operating Cost Sheet of a Month

		Rs.
(A)	**Fixed Charges:**	
	Salary of Driver	800
	Salary of Conductor	600
	Salary of Accountant - cum Manager	600
	Shed Rent	600
	Insurance (5% of 1,20,000 = 6,000/12)	500
	Road Tax (6600x 50 = 30,000/12)	2,500
	Permit & Licence Fees	1,200

	Total Fixed Charges	**6,800**
(B)	**Variable Charges :**	
	Depreciation (40% of 1,50,000 = 60,000/12)	5,000
	Diesel Cost (5,560 / 3x3)	5,560
	Lubricants (50% of 5,560)	2,780
	Repairs & Spares (24,000 / 12)	2,000
	Total Fixed Charges	**15,340**
(C)	Total Operating Cost (A+B)	22,140
Add :	Profit @ 30% on net takings (22,140 x 30/70)	9,488.57
(D)	Net Takings	31,628.57
Add :	Passenger tax 15% of total takings (31,628.57x15/85)	5,581.51
(E)	Gross of Total takings (sale proceeds of tickets)	37,210.08
(F)	Passenger kms	2,40,000
(G)	Cost per passenger kms. 22,140 / 2,40,000	.092
(H)	Fare or Rate to be charged per passenger per km 37,210.08 / 2,40,000	.155

टिप्पणी : बस द्वारा तय किय कुल किलोमीटर व कुल यात्री किलोमीटर की गणना निम्न प्रकार की गई है :-

Delhi to Chandigarh=	300 x 10	= 3,000 x $\frac{50 \times 90}{100}$	= 1,35,000
Delhi to Agra =	240 x 10	= 2,400 x $\frac{50 \times 80}{100}$	= 96,000
Delhi Local =	40 x 4	= 160 x 50 x 112.5	= 9,000
	Total passenger kms.		**2,40,000**

Problem 12.1: The net profit M. Ltd. shown by Cost accounts for the year ended 31st December, 1994 was Rs. 86,200. A scrutiny of the figures of the financial accounts and the cost accounts revealed the following facts :

(a)	work overhead under recovered in cost	1,560
(b)	Administrative overhead recovered in excess in cost	850
(c)	(i) Depreciation charged in financial account	5,600
	(ii) Depreciation recovered in cost	6,250
(d)	Interest on investment not included in costs	4,000
(e)	Loss due to obsolescence charged in Financial Accounts	2,850
(f)	Income tax provided in Financial Accounts	20,150
(g)	Bank Interest and Transfer fees (in financial books)	375
(h)	Stores adjustment (credited in financial books)	237
(i)	Loss due to depreciation in stock value (Charged in financial accounts)	3,375

Prepare a statement showing reconciliation between the figures of net profit as per cost accounts and the figures of the net profit to be calculated for the Financial Accounts, as per reconciliation.

Solution:

Reconciliation Statement

		Rs.	Rs.
	Profit as per Cost Accounts		86,200
Add:	Administrative Overhead excess recovered	850	
	Depreciation excess charged in cost accounts (Rs. 6,250 - 5,600)	650	
	Interest on investment not included in cost	4,000	
	Bank Interest and Transfer Fees	375	
	Stores Adjustments (not included in cost)	237	6,112
Less:	Work Overhead under recovered in Cost	1,560	
	Loss due to obsolescence charged in F.A.	2,850	
	Income Tax provided in financial books	20,150	
	Loss due to depreciation in stock value	3,375	27,935
	Profit as per financial Books		64,377

Problem 12.2 : Find out the profit as per costing records and financial accounts from the following information and reconcile the results.

	Product A	Product B
No. of units produced and sold	600	400
Total Direct Materials (Rs.)	3,600	2,800
Total Direct Wages (Rs.)	3,000	2,400
Selling Price per unit (Rs.)	25	30

Works overhead is charged at 80% of direct wages and office overhead at 25% of works cost. Actual works expenses amounted to Rs. 4,500 and office expenses to Rs. 3,900. There were no opening or closing stock.

Solution :

Cost Sheet Production A-600; B-400

Particulars	Product A		Product B	
	Total Cost	Cost per unit	Total Cost	Cost per unit
	Rs.	Rs.	Rs.	Rs.
Direct Materials	3,600	6.00	2,800	7.00
Direct Wages	3,000	5.00	2,400	6.00
Prime Cost	6,600	11.00	5,200	13.00
Factory Overhead (80% of wages)	2,400	4.00	1,920	4.80
Works Cost	9,000	15.00	7,120	17.80
Office Overhead (25% of W.C.)	2,250	3.75	1,780	4.45
	11,250	18.75	8,900	22.25
Profit	3,750	6.25	3,100	7.75
Sales	15,000	25.00	12,000	30.00

Total Profit = 3,750 + 3,100 = 6,850

Profit & Loss Account

	Rs.		Rs.
To Material : A - 3,600 B-2,800	6,400	By Sales A : 15,000 B : 12,000	27,000
To Wages : A - 3,000 B - 2,400	5,400		
To Factory expenses	4,500		
To Office expenses	3,900		
To Profit	6,800		
	27,000		27,000

Reconciliation Statement

	Rs.
Profit as per Cost Accounts (3750 + 3100)	6,850
Add : Office Overhead over charged in cost (4030 - 3900)	130
	6,980
Less : Factory Overhead under charged in cost (4500 - 4320)	180
Profit as per Financial Accounts	6,800

Problem 14.1: In manufacturing a commodity the standard quantity of material was fixed at 10 kg. and standard price was fixed at Rs. 2 per kg., the actual quantity consumed came to be 12 kg. and the actual price paid was Rs. 1.90 per kg.

You are required to calculate -

(a) Material Cost Variance;

(b) Material Rate Variance;

(c) Material Usage v

Solution :

(a) Material Cost Variance = TSC - TAC

= (SQ x SP) - (AQ x AP)

= (10 x 2) - (12 x 1.90)

= 20 - 22.8 or Rs. 2.80 (A)

(b) Material Price Variance = AQ (SP-AP)

= 12 (2-1.90) or Rs. 1.20 (F)

(c) Material usage Variance = SP (SQ - AQ)

= 2 (10-12) or Rs. 4 (A)

Verification :

MCV = MPV + MUV

Rs. 2.80 (A) = Rs. 1.20 (F) + Rs. 4 (A)

Problem 14.2 : The Standard Metal Co. Ltd. : manufactures, a single product. The standard of which is as follows:

Material X 60% at Rs. 20

Material Y 40% at Rs. 10

Normal loss in production is 20% of input. Due to shortage of material X, the standard mix was charged. Actual results for March, 1996 were as follows :-

Material X - 210 kgs. at Rs. 20 = 4,200

Material Y -	190 kgs.	at Rs. 9	=	1,710
Input	400 kgs.		Rs.	5,910
Loss	70 kgs.			
Output	330 kgs.			

Calculate Material Variances.

Solution :

(i) Material Cost Variance = TSC - TAC

X = (247.5 x 20) - (210 x 20) = Rs. 750 (F)

Y = (165 x 10) - (190 x 9) = Rs. 60 (A)

Rs. 690 (F)

Problem 14.3 : Calculate (i) Labour Rate Variance (ii) Labour Efficiency Variance (iii) Labour Mix Variance (iv) Labour Cost Variance

	Standard		Actual	
Workman A :	20 hrs. @ Rs. 3 =	Rs. 60	60 hrs. @ Rs. 4 =	120
Workman B :	20 hrs. @ Rs. 7 =	Rs. 140	30 hrs. @ Rs. 6 =	180
	40 hrs.	Rs. 200	60 hrs.	300

Solution :

(i) Labour Rate Variance = AH (SR - AR)

A = 30 (3 - 4) = Rs. 30 (A)

B = 30 (7 - 6) = Rs. 30 (F)

Rs. Nil

(ii) Labour Efficiency Variance = SR (SH- AH)

A = 3 (20 - 30) = Rs. 30 (A)

B = 7 (20 - 30) = Rs. 70 (F)

Rs. 100 (A)

(iii) Labour Mix Variance = SR (RSH- AH)

A = 3 (30 - 30) = Rs. Nil

B = 7 (30 - 30) = Rs. Nil

Rs. Nil

Revised Standard Hours (RSH) = $\frac{\text{SH of each grade at Labour x TAH}}{\text{Total Std. Hours (TSH)}}$

TAH = Total Actual Hours

A = $\frac{20}{40}$ X 60 = 30 hrs.

B = $\frac{20}{40}$ X 60 = 30 hrs.

(iv) Labour Cost Variance = TSC - TAC

A = (20 x 3) - (30 x 4) = Rs. 60 (A)

B = (20 x 7) - (30 x 6) = Rs. 40 (A)

Rs. 100 (A)

टिप्पणी – प्रमाप मिश्रण व वास्तविक मिश्रण का अनुपात समान होने के कारण श्रम मिश्रण विचरण (स्डट) शून्य हैं ।

Problem 15.1 : From the following find out :

(i) P/V Ratio;

(ii) Break - even point ;

(iii) Net Profit from the sale of Rs. 3,00,000;

(iv) Required sale for the net profit of Rs. 70,000.

Position of A Ltd., for the year 1955 :

	Rs.
Sales	2,00,000
Variable overhead	1,50,000
Gross Profit	50,000
Fixed overhead	15,000
Net Profit	35,000

Solution :

(i) $\text{P/V Ratio} = \frac{S - V}{S} \times 100$

$= \frac{2,00,000 - 1,50,000}{2,00,000} \times 100 = 25\%$

(ii) $\text{Break - even Point (Rs.)} = \frac{F}{\text{P/V Ratio}} = \frac{15,000}{25} \times 100$

(iii) Net Profit from the sale of Rs. 3,00,000

Profit = Sales x P/V Ratio - Fixed Cost

$= 3,00,000 \times \frac{25}{100} - 15,000$

$= 75,000 - 15,000 = \text{Rs. } 60,000$

(iv) Required Sales for the profit of Rs. 70,000

$$\text{Required Sales (Rs.)} = \frac{\text{F + Desired Profit}}{\text{P/V Ratio}}$$

$$= \frac{15{,}000 + 70{,}000 \times 100}{25}$$

$$= \text{Rs. } 3{,}40{,}000$$

Problem 15.2 : Modern company has maximum capacity of 4,40,000 units per annum. Normal capacity is regarded as 3,60,000 unit in a year. Variable manufacturing cost (including material and labour) is Rs. 2.20 per unit. Fixed factory overhead is Rs. 1,08,000 per annum. Selling and Distribution cost of the fixed nature is Rs. 50,400 per annum where as variable is Rs. 0.60 per unit. Sale price is Rs. 4 per unit. Calculate:

(i) Break-even point, P/V Ratio and Margin of Safety.

(ii) Number of units to be sold to earn a profit of Rs. 12,000 in a year.

(iii) Sales value needed to earn a profit of 10% on sales.

(iv) Selling price per unit to bring down break - even point to 1,20,000 units of the product.

Solution :

Marginal Cost Statement

Selling Price per unit		4.00
Less : Variable Cost per unit :		
Manufacturing	2.20	
Selling & Distribution Cost	0.60	2.80
Contribution per unit		1.20

(i) Calculation of P/V Ratio, BEP and Margin of Safety.

(a) $P/V\ Ration = \frac{C \times 100}{S} = \frac{1.20 \times 100}{4.00}$ or 30%

(b) $BEP\ (in\ Rs.) = \frac{F}{P/V\ Ration} = \frac{158400}{30\%}$ or Rs. 5,28,000

(c) Margin of Safety (in Rs.) = Actual Sales - BEP Sales

= 14,40,000 - 5,28,000

= 9,12,000

$Margin\ of\ Safety\ (in\%) = \frac{Actual\ Sales - BEP\ Sales}{Actual\ Sales} \times 100$

$= \frac{14,40,000 - 5,28,000}{14,40,000} \times 100$

$= \frac{9,12,000}{14,40,000} \times 100$ or 63.3%

(ii) Number of units to be sold to earn a profit of Rs. 12,000 in a year.

$Repaired\ sales\ (in\ units) = \frac{F + Desired\ Profit}{Contribution\ per\ unit}$

$= \frac{1,58,400 + 12,000}{1.20}$

$= \frac{1,70,400}{1.20} = 1,42,000$ units

(iii) Sales value needed to earn a profit 10% on sales:

Let sales at this level be Rs. X

$Desired\ Profit = X \times \frac{10}{} = 0.1\ X$

$$\text{Required sales (in Rs.)} = \frac{\text{F + Desired Profit}}{\text{P/V Ratio}} \times 100$$

$$X = \frac{1{,}58{,}400 + 0.1X}{30\%}$$

$$\frac{X}{1} = \frac{(1{,}58{,}400 + .1X) \times 100}{30}$$

$$\frac{X}{1} = \frac{1{,}58{,}400 + 10X}{30}$$

or $30X = 1{,}58{,}40{,}000 + 10X$

or $30X - 10X = 1{,}58{,}40{,}000$

or $20X = 1{,}58{,}40{,}000$

or $X = \frac{1{,}58{,}40{,}000}{20}$

$$X = 7{,}92{,}000$$

(iv) Selling price per unit to bring down BEP to 1,20,000 units of the product :

$$\text{S.P. per unit} = \frac{\text{F}}{\text{New BEP in units}} + \text{V. Cost per unit}$$

$$= \frac{15{,}84{,}000}{1{,}20{,}000} + 2.80$$

$$= 1.32 + 2.80 = 4.12$$

Problem 15.3 : Calculate

(i) The amount of fixed expenses.

(ii) The number of units to break - even.

(iii) The number of units to earn a profit of Rs. 40,000.

The selling price per unit is Rs. 100.

The company sold in two period 7,000 units and 9,000 units and has incurred a loss of Rs. 10,000 and earned a profit of Rs. 10,0000 respectively.

Solution :

P/V Ration = $\frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100$

= $\frac{10,000 - (-10000)}{9,00,000 - 7,00,000} \times 100$

= $\frac{20,000 \times 100}{2,00,000}$ = 10%

(i) Fixed Cost = Sales x P/V Ratio - Profit

= $9,00,000 \times \frac{10}{100} - 10,000$ = Rs. 80,000

or = $7,00,000 \times \frac{10}{100} - (-10,000)$

= 70,000 + 10,000 = 80,000

(ii) BEP (in units) = $\frac{F}{\text{Contribution per unit}} = \frac{80,000}{10}$

= 8,000 units

Contribution per unit -

	Sales in Unit	Profit or Loss
	Rs.	Rs.
II Period	9,000	10,000
I Period	7,000	-10,000
On Subtracting	2,000	20,000

Contribution per unit = $\frac{20,000}{2,000}$ = Rs. 10

(iii) Number of units sold to earn a profit of Rs. 40,000

Required Sales (in units) = $\frac{\text{F + Desired Profit}}{\text{Contribution per unit}}$

= $\frac{80,000+ 40,000}{10}$

= 12,000units

Chapter-1

Management Accounting: An introduction

Q.1 Define 'Management Accounting'? State its main characteristics and objectives.

Ans. Any form of accounting which enables a business to be conducted more efficiently can be regarded as management accounting?

Accounting to T.G. Rose "Management accounting is the adaptation and analysis of accounting information, and its diagnosis and explanation in such a way as to assist management.

Characteristics of Management Accounting:-

1. Management accounting enables future forecasting.
2. It is selective in nature.
3. Supplies Data, Not Decisions.
4. Integrated system.
5. It is a service functions which provides information to the management for formulating policies.
6. Established financial accounting rules are not followed in Management Accounting.
7. Management Accounting emphasizes, specially, on cause and effect relationship.
8. Emphasis is placed on nature of Cost Elements.
9. Management accounting is a developing subject.
10. Potentiality of development as a profession.

Objectives of management Accounting

The main objective of management accounting is to provide information for successfully carrying out the managerial duties. The objectives of management accounting are as under:-

1. To assist in Planning
2. Helps is organizing.
3. To assist in Interpreting Financial Information.
4. To assist in Controlling Performance.
5. To assist in Co-ordination.
6. Help in Motivating Employees.
7. Helps in analysis and interpreting the financial information.
8. To assist in decision making.
9. Helpful in reporting.
10. Helpful in fixing responsibility.
11. To Assure Accountability.

Q.2 What are the tools and techniques used in management Accounting?

Ans. Following tools and techniques are used in management accounting:-

1. Financial Planning
2. Analysis of financial statement
3. Historical Cost Accounting.
4. Responsibility Accounting.
5. Control Accounting
6. Revaluation Accounting
7. Decision Accounting
8. Statistical Methods
9. Management Information System
10. Mathematical Techniques
11. Taxation

Q.3 Describe in brief the functions of management accounting?

Ans. Management Accounting helps the management is two ways:-

I. Providing necessary accounting information to management

II. Helps in various activities and tasks performed by the management.

I. Providing necessary accounting information to management:-

(a) Measuring:- For helping the management in measuring the work efficiency in different areas it is done on the past and present incidents with context to the future. In standard costing and budgetary any control, standard and actual performance is compared to find out efficiency.

(b) Recording:- In management accounting both the quantitative and qualitative types of data are included and this accounting is done on the basis of assumptions and even those items which cannot be expressed financially are included in management accounting.

(c) Analysis:- The work of management accounting is to collect and analyze the fact related to the managerial problems and then present them in clear and simple way.

(d) Reporting:- For the use of management various reports are prepared. Generally two types of reports are prepared:-

a. Regular Reports
b. Special Reports.

II - **Helping in Managerial works and Activities:-**

The main functions of management are planning, Organizing, staffing, directing and controlling. Management accounting provides information to the various levels of managers to fulfill the above mentioned responsibilities properly and effectively. It is helpful in various management functions as under:-

(a) Planning:- Through management accounting forecasts regarding the sales, purchases, production etc. can be obtained, which helps in making justifiable plans. The tools of management accounting like standard costing, cost – volume – profit, analysis etc. are of great managerial costing, help in planning.

(b) Organizing:- In management accounting whole organization is divided into various departments, on the basis of work or production, and then detailed information are prepared to simplify the thing. The budgetary control and establishing cost centre techniques of management accounting helps which result in efficient management.

(c) Staffing:- Merit rating and job evaluation are two important functions to be performed for staffing. Generally only those employs are useful for the organization, whose value of work done by them is more then the value paid to them.

Thus by doing cost-benefit analysis management accounting is useful in staffing functions.

(d) Directing:- For proper directing, the essentials are co-ordination, leadership, communications and motivation. In all these tasks management accounting is of great help. By analyzing the financial and non financial motivational factors, management accounting can be an asset to find out the best motivational factor.

Q.4 Explain the scope of management accounting and discus how it serves the management needs?

Ans. Scope of management accounting :- Management accounting has a vast area which includes financial accounting and extends to the functions of a system of cost accountancy, budgetary control and statistical methods. The scope of management accounting includes:-

1. The management accounting is likely to evaluate the variation by reasons and the accountability and to put forward suitable corrective measures.
2. Analyzing and interpreting accounting and other figures to craft it logically and usable to management.
3. Configuration, installation and operation of accounting cost accounting and information systems, as a result it has to utilize these systems to get together the altering needs the of the management functions.
4. Provide system and techniques to estimate the recital of the right managements in the beam of the objectives of the firm.
5. The management accounting presents the history the figures in such a way as to reproduce the trends of events to the management.
6. Providing mean of communicating management plans to the various levels of the organization and assists the management in directing their activities
7. It is support management in decision making by:-
   a. Providing significant accounting data,
   b. Analyzing the outcome of alternative proposals on the profits and the situation of the enterprise.

Serve Management Needs:- Management accounting's main function is to assist the management. It presents comprehensive accounting information to the management to the facilitate them to keep useful control over stores and stock, to increase efficiency of the organization and check wastage and losses. The various advantages resulting by the management from a high – quality system of accounting are as follows:-

1. Management accounting helps in organizational efficiency.
2. Management accounting check and remover wastages.
3. Management accounting formulates comparisons.
4. Helps in price fixing.
5. Management accounting helps in maximizing profitability.
6. Management accounting protects against Seasonal fluctuations and trade Cycle.
7. Management accounting helps in growth of National Economy.
8. Management accounting helps in performance appraisal of business.

Q.5 Give limitation of management Accounting?

Ans. The main limitations are as follows:-

1. It is based on historical data.
2. Not an alternative to administration.
3. Lack of knowledge of Related Subjects.
4. Lack of continuity in efforts.
5. Effect of human factor.
6. Lack of Objectivity.
7. Costly installation.
8. Evolutionary stage.
9. Effect of time factor.
10. Psychological resistance.

Chapter 2

Capital Structure

Q.1 What is meant by capital structure.

Ans. Capital structure means the pattern of capital employed in the firm. It is a financial plan of the firm in which the various sources of capital are mixed in such proportions that those provide a distinct capital structure most suitable for the requirement of the firm.

Capital structure represents the mutual proportion between long term sources of capital which includes equity shares, preference shares, reserve & surplus and long term debts.

According to Weston and Brigham:-

"Capital structure is the permanent financing of the firm, represented by long-term debt, preferred stock and net-worth."

Q.2 Define financial structure, Asset structure and capitalization?

Ans. Financial structure:- refers to the way, the company's assets are financed. It is the entire left hand side of balance sheet which includes all the long term and short-term sources of capital.

Asset Structure:- Asset structure refers to total assets and their components, It includes all types of assets of the company i.e. fixed assets and current assets.

Capitalization:- Capitalization is a quantitative concept indicating the total amount of long-term finance required to carry on the business capitalization comprises a corporation's ownership capital and its borrowed capital, as represented by its long - Term indebtedness.

It can be presented by the following figure:-

Financial Structure	Asset Structure	Capitalisation
↓	↓	↓
Equity Share Capital	.Fixed Assets	.Equity share Capital
. Preference Share Capital	. Current Assets	Preference Share

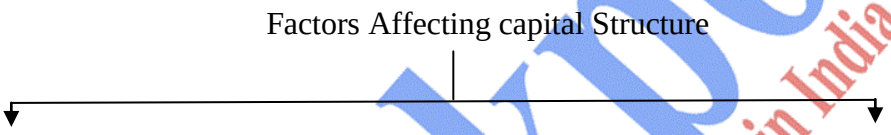
Capital

. Debentures
. Current Liabilities

. Debentures

Q.3 What factors should be borne in mind in deciding a capital Structure?

Ans. All the factors which affect its capital structure should be considered at the time of its formation. Generally factors affecting capital structure are divided in two categories, namely (A) Internal factors, and (B) External Factors.



. Internal factors
- Size of business
- Nature of business
- Regularity of Income

↑

- Assets Structure
- Age of Firm
- Attitude of Management
- Freedom of Working
- Desire to control
- Future plans
- Period and Purpose of Financing
- Operating Ratio
- Trading on Equity

. External Factors
- Capital Market Conditions
- Nature of Invertors
- Policy of financial Institutions
- Taxation Policy
- Government Control
- Cost of Capital
- Seasonal Nature
- Economic Fluctuations
- Nature of competition

Q.4 What is balanced or optimum capital structure? Give essential of Optimum Capital Structure.

Ans. The optimal or the best capital structure implies the most economical and safe ratio between various types of securities. A capital structure of security mix that minimizes the firm's cost of capital and maximizes firms' value is called optimal capital structure.

Essentials of Optimum Capital Structure:-

1. Simplicity:- The capital structure should not complicated. Therefore, it is essential that in the beginning only equity shares or preference shares should be issued and afterwards debentures may be issued
2. Flexibility:- The capital structure should suit to the requirement of the firm in both short-term and long-term.
3. Minimum Cost:- A sound capital structure must ensure the minimum cost of capital therefore, while determining the capital structure, such a mix of different securities should be selected in which the cost in minimum.
4. Minimum Risk:- The capital structure should be heart risky. Therefore, sound capital structure attempts at a perfect trade-off between return and risk.
5. Maximum Return:- The appropriate capital structure would be one that is most profitable to the company. It is possible when the cost of financing is minimum and the firm earns stables and adequate income regularly.
6. Maximum Control:- The capital structure should be designed to preserve the control of the company's management in the hands of existing shareholders. Therefore, additional funds be raised through debentures and preference shares.
7. Safety:- Debt should be used to the extent that the burden of fixed charges does not create the danger of insolvency.
8. Full Utilization:- The amount of capital should be determined in such a way that neither there should be over capitalization or under capitalization.
9. Adequate Liquidity:- The capital structure should be determined in such a way the it may always provide adequate liquidity.
10. Alternative Rules:- The capital structure should be that which provides different sights to the securities holder such as return, voting power, redemption, transfer etc. are more and more attractive.
11. Fulfill Legal Requirements:- The capital structure should fulfill certain rules framed in companies and other acts regarding the ratios of various types of securities in the capital structure of business concerns.

Q.5 What is meant by point of indifference?

Ans. Point of indifference is a level of earnings before interest and tax where earnings per share remain constant irrespective of the debt equity mix. The policy of trading on equity increases the earnings per shares but it is beneficial

to a certain point after which it can proves to be disastrous. Hence till the rate of intent is lower than the return on assets, trading on equity is beneficial, but when both becomes equal which is called the point of indifference, more use of debt capital will be harmful.

Thus with the help of EBIT-EPS analysis keeping in view the point of indifference an optimal capital structure can be determined.

The point of indifference of EBIT can be ascertained by using the following algebraic formula:

$$\frac{(X-R_1)(1-T) - PD}{N_1} = \frac{(X-R_2)(1-T) - PD}{N_2}$$

Where,

X = EBIT at Indifference Point
R_1 = Interest in option I
R_2 = Interest in option II
T = Tax Rate
PD = Preference Dividend
N_1 = No. of Equity Shares in Option I
N_2 = No. of Equity Shares in Option II

Q.6 Explain the principle of 'Trading on Equity'
Discuss its utility to the management and point out its limitations.

Ans. Gestenberg defines trading on equity in these words: "When a person or corporation used borrowed capital as well as owned capital in the regular conduct of its business then it is said to be trading on equity."

Trading on equity is an arrangement under which a company makes use of borrowed capital carrying a fixed rate of interest or dividend in such a way as to increase the return on equity shares. The policy of trading on equity can be adopted only when the management is confident that he will earn profits more than the interest to be paid on debt capital. In other words, trading on equity is advantageous then the rate of interest on debt is less than the average rate of return, otherwise not.

Utility of Trading on Equity:-

The basic philosophy behind trading on Equity is to use debt capital to earn more than their cost and to raise the sate of return on equity share capital. This policy

leads higher dividend rate for equity shares, improvement of the goodwill of the firm and increase in the market price of equity shares. All these factors make it easy to get more lean from market at a lower rate of interest.

Limitations of Trading on Equity:

1. The firm should not follow the policy of trading on equity if there is no certainty and stability of income of the firm.
2. Increasing rate of interest of future loans as the risk of successive creditors increases due to prior lien of the existing creditors on the assets of the firm.
3. Sometimes the management, despite of strong financial position or the capacity to raise loans by issuing debentures at favorable terms, does not prefer the policy of trading on equity.
4. There is a limit of carrying on business with the use of borrowed funds. After that limit, there is a fear of over capitalization.
5. There are some legal and contractual difficulties without the fulfillment of those the management cannot follow the policy of trading on equity.
6. There are some other limitations like increasing burden of interest, interference of creditors in management and falling goodwill of the firm.

Chapter 3

Theories of capital structure

Q.1 Name the theories of capital structure?

Ans. The theories of capital structure are as follows:-

1. Net Income theory.
2. Net Operating Income theory.
3. Traditional theory.
4. Modigliani – Miller theory.

Q.2 Explain the theories of capital structure in brief?

Ans. Net Income (NI) theory:-

This theory was propounded by David Durand. According to this theory a firm can increase the value of the firm and reduce the overall cost of capital by increasing the proportion of debt in its capital structure to the maximum possible extent.

As debt is cheaper source of finance, it results in a decrease in overall cost of capital leading to an increase in the value of the firm as well as market value of equity shares.

Assumptions:

1.The cost of debt is cheaper than the cost of equity

2.Income tax has been igored

3.The cost of debt capital and cost of equity capital remains constant i.e. with the increase in debt capital the risk perception of creditors and equity investors does not change]

4. Total value of firm = Market value of Equity + market value of debt.

Or V = S +D

2. Market Value of share (S);

$$S = \frac{F}{Ke} \quad \text{Or} \quad \frac{EBIT-I}{Ke}$$

Where;

E = Earnings available for equity shareholders

EBIT = Earnings before interest and Tax

Ke = Cost of Equity Capital.

3. The overall cost of capital or capitalization ratio:

$$Ko = \frac{EBIT}{V}$$

Ko = Overall cost of capital
V = Value of the firm.

Net Operating Income (NOI) Theory

This theory has also been propounded by David Durand. This theory is just opposite that of Net Income Theory. According to this theory, the total market value of the firm (v) is not affected by the change in the capital structure and the overall cost of capital (Ko) remains fixed irrespective of the debt-equity mix. According to this theory there is nothing like optimum capital structure.

Assumptions:-

1. The split of total capitalization between debt and equity is not essential or irrelevant.
2. At every level of capital structure business risk is constant; therefore, the rate of capitalization also remains constant.
3. The rate of debt capitalization remains constant.
4. There are no corporate taxes.
5. With the use of debt funds which are cheaper, the risk of shareholders increases, which in turn results to increase in the equity capitalization rate. Hence debt capitalization rate remains constant.

Computation:-

1.Value of the firm = $\frac{EBIT}{Ko}$

Or V = S + D
Or S = V – D

2.Cost of Equity Capital:-

$$Ke = \frac{EBIT - I}{S}$$

I = Interest on debt

Modigliani – miller theory:-

This theory was propounded by Franco Modigliani and Merton Miller (generally referred to as M-M) who are Nobel Prize winners in financial economies. They have discussed their theory in two situations:

(i) When there are no corporate taxes, and

(ii) When there are corporate taxes.

(i) **In the Absence of Corporate taxes:-**

As per Modigliani – Miller if there are no corporate taxes than the changes in the capital structure of any firm do not bring any chage in the overall cost of capital and total value of firm. The reason is that though the debt is cheaper to equity with increased use of debt as a source of finance, the cost of equity increases and the advantage of low-cost debt is offset equally by the increased cost of equity.

According to this theory, two identical firms in all respect, except their capital structure, cannot have different market value or cost of capital due to arbitrage processes.

For example, suppose the capital structure of company comprises of equity share capital of Rs 10, 00, 00 and 6% debentures of Rs 20, 00, 00. If the average rate of return on total capital employed is 10%, the company will earn a profit of Rs. 30,000 (10% on 30, 00, 00). Out of this profit, the company will have to pay leaving a balance of (1800/10,0,0x100) Which is the company succeeds in paying more dividend on equity shares capital with the use of borrowed capital such a situation in any business is known as 'trading on equity'.

Assumptions:-

1. The capital market is perfect.
2. There is no transaction cost.
3. All the firms can be divided in hom0geneous risk classes.
4. There is no corporate tax.
5. All the profits of the firm are distributed.
6. Individual investors can easily get loans on the same terms and conditions on which any firm gets.

(ii) When Corporate Taxes Exist:-

The basic theory of Modigliani- Miller that the changes in the capital structure do not affect the total value of the firm and overall cost of capital is not true in the presence of corporate taxes.

Corporate taxes are reality; therefore, they changed their basic theory in the year 1963.

They accepted this fact that for corporate tax determination of interest is a deductible expenditure than the cost of debt is low. Therefore if any firm uses debt in its capital structure it leads to reduction in the overall cost of capital and increase in the value of the firm. They accepted that the total value of a leveraged firm is high than the non-leveraged firm.

Computation:-

1. Value of Unleveled firm (Vu)

$$Vu = \frac{\text{Earning after tax but before Interest}}{\text{After tax equity capitalization Rate}}$$

$$Vu = \frac{EBIT\ (1 - T)}{Ke}$$

2. Value of levered firm (Vt)

$$Vt = Vu + DT \quad \text{or} \quad \frac{EBIT\ (1\text{-}t) + DT}{Ke}$$

Where D = Amount of Debt
T = Tax Rate

Traditional Theory:-

The traditional theory is a mid-path between Net Income theory and Net Operating Income theory. According to this theory the cost of debt capital is lower than the cost of equity capital, therefore a firm by increasing the proportion of debt capital in its capital structure to a certain limit can reduce its overall cost of capital and can raise the total value of the firm. But after a certain limit the increase in debt capital leads to rise in overall cost of capital and fall in the total value of the firm. A rational or appropriate mix of debt and equity minimizes overall cost of capital and manimises value of the firm. Thus this theory accepts the idea of existence of optimum capital structure. Ezra soloman has enplained the effects of changes in capital structure on the overall cost of capital (Ko) and the total value of firm (V) in the following stages :

First Stage : In the beginning the use of debt capital in the capital structure of the firm results in fall of over all cost of capital and increases the total value of the firm because in

the first stage cost of equity remains fixed rises slightly and use of debt is favourably treated in capital market.

Second State : In this stage beyond a particular limit of debt in the capital structure , the additional of debt capital will have insignificant or negligible effect on the value of the firm and the overall cost of capita. It is because the increase in cost of equity capital, due to increase in financial risk, offsets the advantage of using low cost of debt. Therefore during this second stage the firm can reach to a point where overall cost of capital is minimum and the total value is maximum.

Third Stage: - If the proportion of debt capital in the capital structure of the firm increases beyond an accepted limit this dead to increase in the over all cost of capital and fall in the total value of the firm because the financial risk rises rapidly which results into higher cost of equity capital which cannot be offset led by low debt capital cost. Hence, the total value of the firm will decrease and the overall cost of capital will increase.

Chapter 4

Operating and Financial leverages

Q.1 What do you mean by leverage?

Ans. Leverage means the employment of assets or funds for which the firm pays a fixed cost or fixed return. The fixed cost or fixed return. The fixed cost or return may be thought of as the fulcrum of a lever. In mechanics the leverage concept is used for a technique by which more weight is raised with less power. In financial management the leverage is there an account of fixed cost. If any firm is using some part of fixed cost capital than the firm has leverage which can be used for raising profitability and financial strength of firm.

Q.2 What is operating leverage? Give the formula of calculating operating leverage and degree of operating leverage?

Ans. Operating leverage is defined as the ability to use fixed operating costs to magnify the effect of changes in sales on its operating profits. If the fixed operating costs are more as compared to variable operating costs, the operating leverage will be high and vice-versa. Thus, the term 'Operating leverage' refers to the sensivity of operating profit to changes in sales.

For example, if the sales increase by say 20% and the operating profit increases by 100% it is a case of high operating leverage.

Computation of Operating leverage:-

$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{Operating Profit}}$$

Or

$$\frac{\text{Sales} - \text{Variable cost}}{\text{Contribution} - \text{Fixed Cost}}$$

Degree of Operating Leverage- (DOL)

The degree of operating leverage may be defined as the percentage change in operating profits resulting from a percentage change in sales

-On two levels of sales for comparison:-

Degree of operating leverage (DOL)

$$= \frac{\text{percentage change in profits}}{\text{Percentage change in sales}}$$

-On one level of sales:-

$$\text{DOL} = \frac{\text{Contribution}}{\text{EBIT}}$$

Q.3 What is favorable operating leverage and what is the utility of operating leverage?

Ans. When the profits increase with the increase in sales it is called favorable operating leverage.

Utility of operating leverage:

Operating leverage helps in capital structure decisions and play a vital role in formulation of an optimum capital structure. It is most helpful in long term profit planning as it is useful in taking decisions regarding capital expenditure. It is true to say that operating leverage is basically used in taking capital budgeting decisions.

Q.4 What is meant by 'financial leverage'? How it is computed?

Ans. Financial leverage arises from the presence of fixed financial costs in the income stream of the firm or due to presence of fixed return securities in the capital structure of the company. Fixed cost securities are debentures and preference share.

Thus financial leverage is defined as, 'the firm ability to use fixed financial cost to magnify the effect of changes in earnings before interest and tax (EBIT) on firm's earnings per share. (EPS)

Financial leverage may be favorable or unfavorable. If the earnings made by the use of fixed interest bearing securities is more than their fixed costs. The firm is considered to have 'favorable financial leverage' or trading on equity. If the firm earns less than the cost of borrowed funds, the firm is said to have an 'unfavorable financial leverage'.

Computation of Financial leverage:-

$$\text{Financial leverage} = \frac{\text{Earnings before interest and tax}}{\text{Earnings before tax but after interest}}$$

or

$$FL = \frac{EBIT}{EBT}$$

Degree of Financial leverage: (DFL)

(a) On one level of profit:

$$DFL = \frac{EBIT \text{ /Operating Profit}}{EBT}$$

(b) On two level of profit for comparison :

$$DFL = \frac{\%\text{Change in EPS}}{\%\text{ Change is EBIT}}$$

Q.5 What is combined leverage, give its formula?

Ans. The combined leverage may be defined as the relationship between contribution and the taxable income; it is the combined effect of both the leverage.

Combined Leverage =Operating Leverage X Financial Leverage.

$$\text{Or} \quad \frac{\text{Contribution}}{EBIT} \times \frac{EBIT}{EBT}$$

$$\text{Or} \quad \frac{\text{Contribution}}{EBT}$$

Degree of Combined Leverage : (DCL)

$$DCL = DOL \times DFL$$

Or

$$DCL = \frac{\%\text{ Change in EBIT}}{\%\text{ Change in Sales}} \times \frac{\%\text{ Change in EPS}}{\%\text{ Change in EBIT}}$$

Or

$$DCL = \frac{\% \text{ change in EPS}}{\% \text{ change in Sales}}$$

Q.6 Give difference between operating and financial leverage.

Ans. Difference between operating and Financial leverage

S.No.	Operating Leverage	Financial Leverage
1.	Establishes relationship between sales and Operating Profits	Relationship between Operating profits and return on owners equity.
2.	Concerned with investment decisions	Concerned with method of finance.
3.	Refers to fixed costs in the operations	Refers to the use of borrowed funds.
4.	Relates to the assets side of Balance sheet.	Relates to the liability side of Balance Sheet.
5.	Involves operating risk of being unable to cover fixed operating cost.	Involves financial risk being unable to cover fixed financial cost.
6.	First stage leverage.	Second stage leverage as financial leverage starts where operating leverage ends.

Chapter 5

Management of Working Capital

Q.1 What do you understand by working Capital?
Explain the concept and determinants of working capital.

Ans. Working capital is a fund needed to fulfill the operating cost of a concern. Each and every business concern should have adequate funds to meet its day-to-day expenses and to finance current asset viz., debtors, receivables and inventories. The funds tied up in current assets are known as working capital funds. The funds invested in these current assets keep revolving and are being constantly converted into cash and this cash in again converted into current assets.

Therefore, working capital is also known as circulating capital, 'revolving capital,' 'short-term capital', or liquid capital.

Concepts of working capital:- The working capital has following concepts:

1. **Quantitative concept /caress working capital concept**:- The gross working capital refers to the firm's investment in current assets.

   According to J.S. Milli, "The sum of current assets is the working capital of the business."

   From the management point of view, this concept is more appropriate as the management formulates all the plans on the basis of current assets and concentrates his attention on the quantum of current assets and their profitability. Thus, this is a quantitative aspect of working capital which emphasizes more on quantity than its qualities.

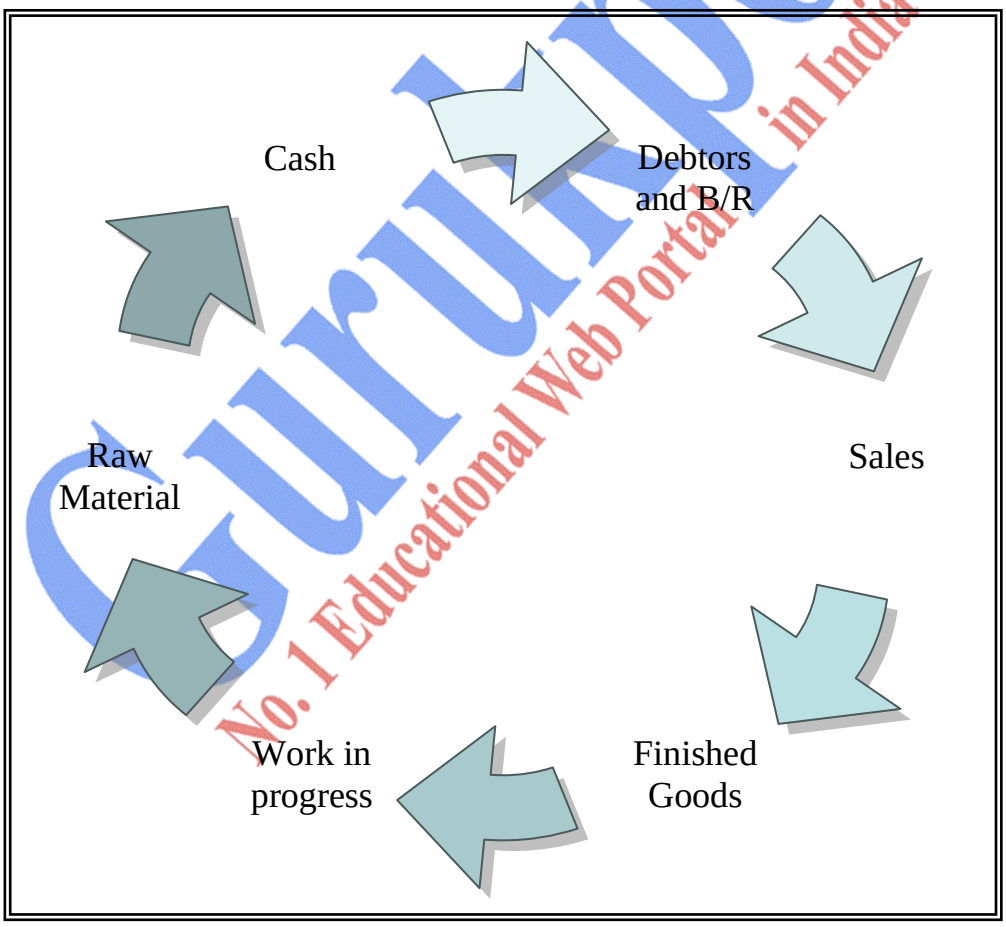
2. **Qualitative or Net working capital concept**: - The net working capital means the difference between current assets and current liabilities. If the amount of current liabilities. If the amount of current assets and current liabilities is equal, it means that there is no working capital.

   The net working capital is a qualitative aspect of working capital and it measures the firm's liquidity. It also indicates the extend to which working capital can be financed with ling term funds. This concept is useful only for accountants, investors, creditors or those persons who have interest in the liquidity and financial soundness of the firm.

3. **Operating Cycle concept**:- The amount of working capital required by a firm depends upon the length of production process and the expenses needed for this purpose The time required to complete the production process right from Purchas of raw material to the realization of sales in cash is called the operating cycle or working capital cycle.

   This concept is more appropriate than the qualitative and quantitative approach because in this case the fund required for carrying on the operational activities is treated as working capital. It is also called circulating capital.

Diagram of Operating Cycle.



Determinants of Working capital :- The amount of working capital required depends upon a large number of factors and each factor has his own importance, They also wary from time to time in order to determine the proper amount of working capital of a firm, the following factors should be kept in mind :-

1. Nature of business
2. Size of business
3. Production process and policies
4. Changes in technologies
5. Requirement of cash
6. Availability of raw material
7. Length of operating Cycle
8. Seasonal Nature of Business
9. Firm's Credit Policy
10. Terms of Purchase and Sales
11. Business Cycle fluctuations
12. Turnover of Inventories
13. Banking relations
14. Rate of growth of business
15. Dividend policies
16. Working capital turnover
17. Taxation Policies
18. Price level changes

Q.2 Name the methods of estimating working capital requirements. Explain the method of calculating working capital by operating cycle and forecasting method?

Ans. Following methods are generally used in estimating working capital :

(i) Operating Cycle Method
(ii) Net Current Assets Forecasting Method
(iii) Projected Balance Sheet Method
(iv) Adjusted Profit and Loss Method
(v) Cash Flow Forecasting Method.

Operating Cycle Method Under this method working capital is estimated by dividing operating expenses incurred during the year by number of operating cycles in a year.

Steps for determining working capital :

Step 1. Calculation of total operating expenses : -

Total operating Expenses = Prime Cost + Factory Expenses + Office and administrative expenses + Selling and distribution expenses for a specific period. (Depreciation and other non-cash and non-operating items are excluded)

Step 2. Calculation of operating Cycle Period –
Operating Cycle = M + W + F + D – C

(a) [M] Material Storage Period = $\frac{\text{Average stock of Raw Material}}{\text{Daily Average Consumption}}$

Average Stock = $\frac{\text{Opening Stock + Closing Stock}}{2}$

Daily Average Consumption = $\frac{\text{Annual consumption of Raw material}}{365}$

(b) [W] W/P or Conversion Period = $\frac{\text{Average Stock of work in progress}}{\text{Daily Average Production Cost}}$

Daily Average Production Cost = $\frac{\text{Total Production Cost}}{365}$

Total Production or Factory Cost = Prime cost + Factory Expenses + Opening Stock of W.I.P – Closing Stock of W.I.P

(c) [F] Finished Goods Storage Period = $\frac{\text{Average stock of Finished Goods}}{\text{Daily Average cost of Goods Sold}}$

Daily Average cost of goods sold = $\frac{\text{Total cost of Goods sold}}{365}$

Cost of goods sold = Production / Factory Cost + Excise Duty + Opening stock of finished goods – closing Stock of finished goods.

(d) [D] Debtors Collection Period = $\frac{\text{Average Debtors + B/R}}{\text{Credit Purchases per day}}$

Credit Purchases per day = $\frac{\text{Total credit Purchases}}{365}$

Step 3. No. of operating cycles in a year –

$$\text{No. of operating cycles} = \frac{365}{\text{Operating Cycle Period}}$$

Step 4. Requirement of Working capital

$$\text{Working Capital} = \frac{\text{Total Operating Expenses}}{\text{No. of Operating cycles a year.}}$$

$$\text{Or } WC = C + \frac{OC}{N} \times CS$$

WC = Working Capital
C = Cash Balance
OS = Operating Cycle Period
CS = Total Operating Expenses
N = No. of days in a year.

Step 5. Provision for contingencies – After determining the amount of working capital, a certain amount say 5% or 10% may be added to cover contingencies.

Net current assets Forecasting Method

According to this method an estimate of all the current assets is made on monthly basis. This should be followed by an estimate of current liabilities. Difference between the forecasted amount of current assets and current liabilities gives net working capital requirements of the firm. Reserve for contingencies will be added to this figure.

Following factors should be kept in mind while using this method :-

1. Stock of finished goods and debtors should be calculated at cash cost.
2. Calculation of 'work-in-progress' depends upon the degree of completion as regard material, labour and overheads. If production cycle is evenly than material period will be taken 100% and 50% in case of labour and overheads.

Working capital can be calculated by forecasting method as follows:

A. For a trading concern :

Statement of Working capital Requirements

Items	Amount
A. Current Assets :	Format

Q. 3 who was the chairman of Tandon Committee and when it was constituted?

Ans. Tandon committee was constituted in July, 1974 under the chairmanship of P.L. Tandon.

Q.4 What are the three principles of Tandon Committee?

Give any two recommendations of Tandon Committee.

Ans The recommendations were mainly based on the following three principles:

1. The borrowers should have to maintain a reasonable financial discipline and give information to the banks regarding projects.
2. The main function of a banker as a lender in to supplements the borrower's resources to carry on acceptable level of current assets.
3. The bank should also know the purpose for which loan has been taken.

Recommendations of Tandon Committee:

1. The committee has suggested norms for 15 major industries regarding maximum levels for holding inventory and receivables.
2. The committee introduced the concept of 'maximum permissible bank finance'. The working capital gap should be bridged by the borrower's own funds, long term borrowings and partly through bank borrowings

Q.5 What do you understand by core current assets?

Ans. The term 'core current assets' refers to the absolute minimum level of investment in raw material, work in-progress, finished goods and stores which are required at all time to carry out the minimum level of business activity. It is also called permanent working capital.

Chapter 6

Financial Statements and Techniques of Financial Analysis

Q.1 What do you mean by financial Statements? Give the names of major financial Statements?

Ans. Financial statements refer to the statements that show the financial position and results of business activities at the end of the accounting period.

The financial statements of a concern consist of two statements:-

(i) Position Statement or Balance Sheet

(ii) Income Statement or profit and loss Account

Q.2 What are objectives of financial statements? Explain the essential qualities of financial statements?

Ans. The main objective of preparing financial statements are :-

1. To provide financial information regarding assets, liabilities, and owner's equity to the various interested parties such as management, Investors, Creditors, and Government etc.
2. It measures the financial position of a business concern both in short term and long term.
3. To provide necessary information for optimum utilization of resources of the company.
4. To develop faith among the investors regarding the financial position of the concern.
5. To assist the creditors, investors and other parties in assessment and comparison of the assets and liabilities of the company.
6. To serve as the basis of future operations.

Essential Qualities of Financial Statements

Different users like shareholders, investors financial institutions, workers etc. are interested in financial statements, therefore they must be clear, detailed and purposeful.

They must possess the following qualities:-

1. Relevant:- Information which clearly explains the objectives of the concern should only be disclosed in the financial statements.
2. Completeness:- The information should be complete in all respects. For providing complete information use of tables, interpretation, explanation, foot-notes etc. must be done.
3. Understandability:- The information should be given in financial statements in such a way that even the layman can read and understand.
4. Accuracy:- Information provided in financial statements should be reliable and must give accurate position the concern's present position progress and future strategy.
5. Comparability:- Comparison is the essence of financial statement analysis. Financial statements should be prepared in such a way that current year's progress can be compared with that of previous year and inter firm comparison is possible.
6. Timeliness:- Financial statements must possess the quality of promptness i.e. as soon as the financial year ends they must be ready and submitted to the parties concerned.
7. Analytical:- Financial Statement must not only represent facts but also disclose the reasons behind the facts. Financial statement must be analytical

Q.3 State the nature and limitations of financial statements?

Ans. The nature of financial statements as described by the American Institute of certified Public Accountants states that, "financial statements reflect a combination of recorded

This implies that data exhibited in financial statement are affected by –

1. Recorded Facts
2. Accounting conventions and postulates
3. Personal Judgment.

Limitations of Financial Statements:

Although Financial Statements have the appearance of completeness, exactness and finality yet they suffer mainly from the following limitations:-

1. Lack of High Accuracy
2. Lack of qualitative information
3. The information is not precise.
4. They are based on historical cost
5. Do not reflect price level changes.

6. Hiding the real position or window Dressing.
7. Lack of comparability.
8. Affected by personal bias and knowledge.

Q.4 Give four names of fictitious assets and intangible fixed assets.

Ans. Fictitious Assets are:-

1. Preliminary expenses
2. Discount on issue of shares and Debentures.
3. Underwriting commission
4. Dr. Balance of Profit & lose A/c.

Intangible fixed Assets are:-

1. Goodwill
2. Patent
3. Trademark
4. Copyright.

Q.5 What is window dressing?

Ans. Window dressing means manipulation of accounts in such a way so as to conceal vital facts and to show better position than what it actual is.

Q.6 What is Balance Sheet? Illustrate the forms and contents of a balance sheet.

Ans. Balance sheet is one of the most significant financial statements of the business firm. Balance sheet is a statement of assets, liabilities and owner's equity at their respective book values of a business firm as on a specific date

Some important definitions are as follows:-

1. "Balance sheet is a screen picture of the financial position of a going business at a certain moment".

   - Francis R. Stead.

2. "The Balance Sheet might be defined as the dual financial picture of an enterprise, depicting, on the one hand, properties that is utilized and on the other hand, the sources of those properties."

   - H.G..Guthmann.

3. Balance sheet can be prepared ether in horizontal /account form or in vertical / report form.
   a) A Specimen balance sheet in account form is given below
   b) A specimen of vertical balance shat is given below.

Q.7 What do you mean by 'Analysis of Financial Statements'?

Point out the main objective of financial statement Analysis.

Ans. Analysis of financial statements is the systematic numerical calculating of the relationship between one fact with the other to measure the profitability, operational efficiency and the growth potential of the business.
The main objectives of analysis of financial statements are:-

1. To measure an enterprise's operating efficiency and profitability.
2. To evaluate managerial efficiency.
3. To analyze the financial position of an enterprise.
4. To examine the liquidity and solvency position.
5. To make a comparative study of financial statements with other enterprises.
6. To plan future strategy of an enterprise.
7. Spot weakness in the company's operations and take corrective actions.

Q.8 Explain the process of financial analysis.

Ans. Process of financial Analysis is:-
1.Determining the objects of Analysis.
2.Study of past financial statements.
3.Collection of Additional information
4.Approximation and Tabulation
5.Established Relationship between elements.
6.Study of Trend
7.Analysis and Interpretation
8.Presentation and Drawing conclusions.

Q.9 Give the name of main techniques of Financial Analysis?

Ans. Techniques of Financial Analysis:-

- Comparative Financial Statements.
- Common Size Financial Statements.
- Trend Analysis
- Financial Ratios.
- Funds flow statement
- Cash Flow Statement
- Break even Analysis.

Q.10 Write short notes on the following:

- **Comparative Statements**
- **Common – Size Statements**
- **Trend Analysis**

Ans (i) Comparative statements

Comparative financial statements are those statements which present and summarize related accounting data for a number of years showing changes (Absolute or relative or both) in individual items. Comparative financial statement provides necessary information for the study of financial and operational results over a period of time.

Generally the comparative Balance sheet and comparatively profit and loss account are most commonly used.

(a) Comparative Balance Sheet:- Comparative Balance sheet is a method by which comparison of balance sheet made at different period of time to time is done and their trend is shown.

The original data of two years is shown in the first two columns. The third column contains increase or decrease in various items of the balance sheets. After that in the fourth column percentage increase or decrease is shown.

(b) Comparative Income Statement or profit and loss Account:-

In comparative Income statement the change in sales, for a number of accounting periods in absolute figures and percentages is shown.

The comparative income statement also has four columns, first two for original figures of two years and third column for changes in absolute money figures and the fourth for showing relative changes i.e. percentages.

(ii) Common –size statements:-

Expressing each monetary item of the financial statement as a percentage of some total of which that item is a part, transforms a financial statement, is called common-size statement.

According to Kennedy and McMullen, "If the balance sheet and income statement data are shown in analytical percentage – that is, percentages of total assets, total liabilities and owner's equity, and total net sales – a 'common base for comparison is supplied. The statement in this form are designated as common size statements."

Common size statement include common-size balance sheet and common-size profit and loss account.

(a) Common Size Balance Sheet:- The Balance Sheet converted into percentage form is called common size balance sheet. For preparing common-size balance sheet

percentage of each item is calculated taking some common base. The total of liabilities and assets is taken as base, i.e. the sum of assets and liabilities is taken as 100 and other items are expressed as its percentage.

(b) Common Size Profit and loss Account:- In common size profit and loss Account sales figure is taken as base and other items are expressed as percentage of sales. It is useful in studying the trends in the internal items of profit and loss account. The common size profit and loss account is more useful than common size balance sheet.

(iii) Trend Analysis:- The trend analysis is the method of analyzing financial position of a business on the basis of changes in the items of financial statements of successive years in comparison to a specific date or period of commencement of study.

The position of a company cannot be judged only by seeing its present situation, for proper judgment we need part data. Trend analysis is a method by which we can depict general tendency of the data. The following are the methods of trend analysis:-

a. Trend percentages
b. Trend Ratios
c. Graphic or Diagrammatic presentation.

Q.11 Distinguish between Horizontal Analysis and Vertical Analysis?

Ans. When financial statement for a number of years are reviewed and analyzed, it is called horizontal analysis while establishing mutual relationship between the different components of both the statements for a definite period is called vertical analysis.

Horizontal analysis studies trend of different items from year to year to year while in vertical analysis various items are expressed as percentage to any one item taken as base.

Chapter 7

Ratio Analysis

Q.1 What is Ratio Analysis? Give significance or objective of Ratio Analysis?

Ans Ratio analysis is a process of establishing the significant relationship between the items of financial statement to understand the position of a firm. It is a most important tools of evaluating and assessing the efficiency and effectiveness of a concern in various areas of operations.

J. Betty Stated that, "Ratio analysis is used to describe significant relationship which exists between figures shown on a balance sheet, in a profit and loss account, in a budgetary control system or in any other part of the accounting organizations"

Objectives of Ratio Analysis:

1. Express Trends
2. Measures Liquidity Position
3. Measures operational Efficiency
4. Measures profitability
5. Facilitates comparison
6. Knowledge of long-term solvency
7. Helps in planning and forecasting
8. Helps in Decision Making and setting standards.

Q.2 Give limitations of Ratio Analysis?

Ans. Limitations of Ratio Analysis:-

1. Single ratio in itself is meaningless; it does not furnish a complete picture.
2. Lack of Qualitative Analysis of the problem.
3. Affected by Window Dressing.
4. Effect of inherent limitations of accounting
5. Difference in Accounting methods and systems
6. Lack of proper standards
7. Future estimates on the basis of part.
8. Effect of personal Ability and Bias of the Analyst
9. Do not reflect price level changes.

10. No Substitute for Sound Judgment.

Q.3 What do you mean by liquidity? Show the calculaton of various liquidity ratios.

Ans. Liquidity refers to the firm's ability to meet its current financial obligations when they arise liquidity ratio studies the firm's short-term solvency and its ability to pay liabilities.

Some of the principle liquidity ratios are as follows:-

(i) Current Ratio:- Current ratio shown the relationship between current assets and current liabilities. It is also known as working capital ratio.

$$\text{Formula Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Ideal Ratio = 2 : 1

Current assets represent those assets which can be converted into cash within a period of one year, where as current liabilities means obligations. Which are to be paid within a period of one year.

Interpretation:

It current ratio is 2 or more it means concern has the ability to meet its current obligations but if ratio is less than 2, this shows that concern has difficult in meeting current obligations.

(ii) Quick Ratio / Liquid Ratio / Acid – Test Ratio: - Liquidity ratio is the measure of the instant debt paying ability of the business enterprise. This ratio established the relationship between quick current assets and liquid current liabilities.

Formula :

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

$$\text{Quick Ratio} \quad \text{Current Assets - (Stock + Prepaid Expenses)}$$

Quick Assets = Current Assets – (Stock + Prepaid Expenses)

Ideal Ratio :- 1 : 1

Interpretation:- Liquid Ratio of 1 : 1 is considered satisfactory. This ratio reveals liquidity position of a firm. If this ration is less than 1:1, financial position of the firm is unsound. A concern having quick ratio of less than one, may not meet its short term obligations, while a concern having quick ratio of more than one, may be able to meet its short term obligations in time.

(iii) Absolute Liquidity Ratio:- This is also known as super quick ratio. Absolute liquidity ratio is the relationship between the absolute liquid or super quick assets to liquid or quick liabilities.

Formula:-

Absolute Liquidity Ratio	=	Absolute Liquid Assets / Quick Liabilities
Absolute Liquid Assets	=	Cash + Bank + Marketable Securities
Quick Liabilities	=	Current Liabilities – Bank Overdraft.
Ideal Ratio	=	. 5 : 1

Interpretation: If absolute liquid assets are 50% in comparison of quick liabilities it is considered satisfactory because it indicates that firm has enough cash to pay its creditors. It also reveals that the firm should avoid use of short – term loan from bank.

Q.4 What are activity / Efficiency ratio? Explain the various activity ratios.

Ans. Activity Ratios are also known as Turnover Ratios. It is a measure of movement and indicates as to how frequently an account has turned over during a period. An activity ratio is the relationship between sales or cost of goods sold and investment in various assets of the firm. There ratios are always expressed as turnover or in number of times.

The various activity ratios are as follows:-

(i) Stock / Inventory Turnover Ratio: - This ratio tells the rate at which stock is converted into sales and it established a relationship between cost of goods sold and average stock.

Stock Turnover Ratio = Cost of Goods Sold / Average Stock

Cost of goods sold = Opening Stock + Purchases + Direct Expenses – Closing Stock.

Or

Average Stock = (Net sale – Cross Profit) / (Opening Stock + Closing Stock) / 2.

Interpretation: - The inventory turnover ratio is an index of profitability as a high ratio reflects efficient business activates and on the contrary, a low ratio reflects dull business, over investment in stock and stock of unseal able and obsolete goods.

(ii) Debtors or Receivables Turnover Ratio:- This ratio established the relationship between net credit sales and average debtors to determine the efficiency with which the trade debtors are managed.

Formula:

$$\text{Debtors Turnover Ration} = \frac{\text{Net Credit Sales}}{\text{Average Receivables}}$$

$$\text{Net Credit Sales} = \text{Total Credit Sales} - \text{Sales Return}$$

$$\text{Average Receivables} = \frac{\text{Opening Debtors and B/R} + \text{Closing Debtors \& B/R}}{2}$$

Interpretation:- A higher ratio indicates the efficiency in collection from debtors and a lower ratio indicates inefficiency of management in collection from debtors. The low ratio increases the chances of Bad-debts.

(iii) Creditors or Payable Turnover Ratio:- This ratio shows the relationship between net credit purchases and average creditors to determine the efficiency with which the creditors are managed.

Formula:

$$\text{Creditors Turnover Ratio} = \frac{\text{Net Credit Purchases}}{\text{Average Payables}}$$

$$\text{Net Credit Purchases} = \text{Total credit Purchases} - \text{Purchase return.}$$

$$\text{Average payables} = \frac{\text{Opening Creditors B/P} + \text{Closing Creditors \& B/P}}{2}$$

Interpretation:- The lower the ratio, the better is the liquidity position of the firm, and the higher the ratio, the lesser is the liquid position of the firm.

(iv) Total Assets Turnover Ration :- This ratio is calculated by dividing cost of goods sold by total assets employed in business. This ratio indicates how effectively the assets of a business are used.

Formula :

$$\text{Total Assets Turnover Ratio} = \frac{\text{Cost of goods sold or Net Sales}}{\text{Total Assets.}}$$

* While calculated total assets fictitious assets are excluded.
Interpretation: - This ratio indicates the number of times the assets are turned over in a year in relation to sales. If the ratio is low it indicates that the assets of the organization are not being effectively utilized and high ration indicates intensive utilization of fixed assets.

(v) Fixed Assets Turnover Ratio $= \frac{\text{Sales/cost of good sold}}{\text{Fixed assets less depreciation}}$

Interpretation : - This ratio is useful for manufacturing concern. A high ratio is a symbol of better performance and a decline would shows under utilization of fixed assets.

(vi) Current Assets Turnover Ratio : - This is a ratio between current assets and net sales / cost of goods sold.

Formula :

$$\text{Current Assets Turnover Ratio} = \frac{\text{Sales / Cost of good sold}}{\text{Current Assets}}$$

Interpretation : - This ratio is useful for non-manufacturing units which indicates effective use of current assets and over and under investment in the firm.

(vii) Working capital Turnover Ratio : - This ratio shows the relationship between net working capital and net sales / cost of goods sold.

Formula :

Working capital Turnover Ratio = Net sales / Cost of goods sold / Net working capital.

Net working capital = Current assets – current Liabilities
Interpretation : Higher sales in comparison to working capital means over-trading and lower sales in comparison to working capital means under-trading

(viii) Capital Turnover Ratio : - This ratio establishes a relationship between capital employed in business and sales / cost of goods sold.

Formula :

Capital Turnover Ratio = Net sales / Cost of goods sold / Capital Employed

Capital Employed = Total Assets - Current Liabilities.

Interpretation : - This ratio is a measurement of effective use of capita employed which shows profit earning capacity and managerial efficiency of the business. Higher ratio shows higher profit and lower ratio shows lower profit.

Q.5 What is meant by capital structure ratios? Explain the main capital structure ratios.

Ans. Capital structure or leverage ratios are calculated to judge the long-term solvency or financial position of the firm. These ratios show how much amount in introduced by the owner in business and generally these ratios beneficial to the long-term creditors.

The important capital structure ratios are : -

1. Debt-Equity Ratio: - This ratio indicates the relationship between internal and external sources of funds, which measures the relative proportion of debt and equity in financing the assets of the firm.

Formula :

Debt –Equity Ratio = External Equities / Internal Equities/Shareholders fund

Or

$$\frac{\text{Outsiders Fund}}{\text{Shareholders Fund}}$$

External Equities = Long-term loans + Debentures + current liabilities

Internal Equities = Equity Share capital + preference share capital + reserve & Surplus – fictitious assets.

Interpretation : - A high debt=equity ratio indicate that the claim of the Creditors are greater than the of the owners. A high ratio is unfavorable from the firm's point of view, whereas a low debt-equity ratio provide sufficient safety margin to creditors due to high stake of owners in the company.

(ii) Proprietary Ratio : - This ratio establishes a relationship between shareholder's fund and total tangible assets.
Formula :

$$\text{Proprietary ratio} = \frac{\text{Proprietor's fund}}{\text{Total Assets}}$$

$$\text{Proprietor's fund/net worth} = \text{Shareholder's fund/ Internal Equities}$$

Classification of Proprietary Ratio : -

(a) Fixed Assets to Proprietary fund Ratio : -

$$= \frac{\text{fixed assets (less depreciation)}}{\text{Proprietors fund}}$$

(b) Current Assets to Proprietary fund Ratio : -

$$= \frac{\text{Current Assets}}{\text{Proprietors Fund}}$$

Interpretation : - This ratio highlights the general financial strength of the firm. A ratio of 50% is generally considered safe for the creditor. Higher the ratio, the more secured is the position of creditors, and the lower the ratio the greater risk to the creditors.

(ii) Solvency or Debt to total Assets Ratio : - This ratio is calculated to measure the long-term solvency of business. This ratio shows the relationship between total asset and outside liabilities.

Formula :

$$\text{Solvency Ratio} = \frac{\text{Total Outside Liabilities}}{\text{Total Assets.}}$$

Interpretation : - This ratio indicates whether the funds of the company are sufficient to meet its total liabilities. If total assets are more than external liabilities, the firm is treated as solvent.

(iv) Fixed Assets Ratio : - This ratio is also called 'Capital Employed to fixed Assets Ratio". It shows the relationship between long-term funds and fixed assets.

Formula:

$$\text{Fixed Assets Ratio} = \frac{\text{Long term funds/Capital Employed}}{\text{Total Assets.}}$$

$$\text{Capital Employed} = \text{Shareholders Fund + Long term loans + Debentures.}$$

Interpretation : - This ratio reveals long-term solvency of the business. If this ratio is more than one it shows that long-term funds are used to finance current assets. On the contrary, a ratio of less than one indicates that a part of fixed assets is financed by short-term funds.

(v) Capital Gearing Ratio : - This ratio shows the relationship between fixed cost bearing capital and variable cost bearing capital. It is mainly used to analyze the capital structure of the company.

Formula :

$$\text{Capital Gearing Ratio} = \frac{\text{Fixed cost bearing capital}}{\text{Variable cost bearing Capital}}$$

Fixed cost bearing capital = Preference Share Capital + Debentures + Long term loans.

Variable cost bearing Capital = Net worth – Preference Share capital

(vi) Interest Coverage Ratio/Debt Service Ratio : - This ratio is calculated to measure the debt-servicing capacity of a firm. It is determined by dividing the operating profits or net profits before interest and tax by the fixed interest charges.

Formula :

$$\text{Interest Coverage Ratio} = \frac{\text{Net Profit (before interest and tax)}}{\text{Fixed Interest Charges.}}$$

Interpretation : - Interest coverage ratio shows the number of times the interest charges are covered by the income out of which they will be paid. Higher the ratio the more beneficial for the lenders, because this ratio measures the margin of safety for the lenders.

Chapter 8

Funds Flow Statements

Q.1 Explain the meaning and importance of funds flow statement and point out its limitations.

Ans. Meaning of Fund Flow Statement :

Funds Flow Statement comprises of two terms, 'funds' and 'flow'

Fund means working capital and flow means movement of funds. Therefore the funds flow statement shows the changes occurred between two balance sheet's dates. It is a report of the financial operation of a business undertaking. It clearly indicates that from what sources the finance has been arranged in the business & how it ahs been used.

As per accounting standard issued by ICAI, "A statement which summarizes for the period covered by it the changes in financial position including the sources from which the funds were obtained by the enterprises and the specific uses to which funds were applied.

Importance of funds flow Statement :

Funds flow Statement is very useful for management of the organization, shareholders, loan providers, researchers, other firms in the industry and the government.

1. For Management :
   a) To determine the financial consequences of operation.
   b) Aid in procuring new finance.
   c) Allocating the financial resources.
   d) Evaluating the operational issues.
   e) Furnishing working capital.
   f) Determination of Dividend policy
   g) Arrangement of Fixed Assets.
   h) Helpful in planning and control.

For Others :

a) To help to understand the changes in assets which are not readily evident in the income statement or financial position statement.

b) To inform as to how the loans to the business have been used.
c) To point out financial strength & weaknesses.

Limitations :

a) Although FFS provides more meaningful information than B/S & P & L A/c, it does not contain non-current transactions and from this viewpoint, it is less refined document than balance sheet and Profit & Loss A/c
b) It is basically historic in nature & is related to past analysis. Of course, projected funds flow statement may give an idea about the future but it cannot be prepared with much accuracy.
c) It is not the substitute of balance sheet and Profit & loss A/c, it only provides the additional information.
d) FFS is not original in nature; it is only a systematic re-arrangement of 'Accounting data' given in financial statement.
e) It does not provide information about changes in cash; which are more important & relevant than working capital.

Q.2 When does flow of funds takes place?

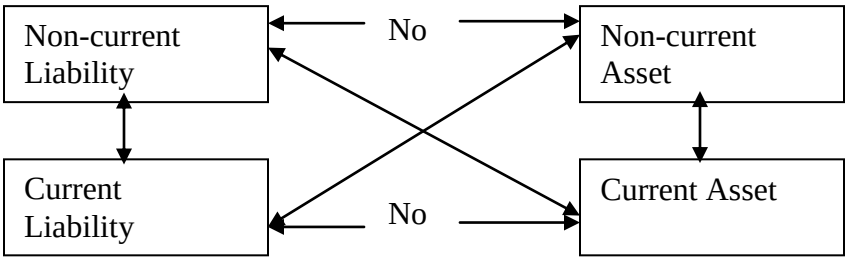
Ans. Fund will flow only when one account out of two accounts involved in any transaction is a current account and other is non-current account. When both the accounts involved in a transaction are either current account or non-current account, there will be no funds flow, in other words there will be no increase/decrease in net working capital.

Transactions which involves flow of funds : -

1. When the transaction affects a current asset account and a non-current asset account.
2. When one aspect of the transaction is current asset and other non-current liabilities.
3. When one aspect of the transaction is current liability and other non-current liabilities.
4. When one aspect of the transaction is current liability and other non-current assets.
5. Flow of funds due to operating profit or operating losses.
6. Flow of funds due to non-trading receipts/incomes and payment/expenses & losses.

The rule of flow of funds can be easily understood with the help of following diagram :

Flow of Funds



Q.3 What are the major sources and uses of funds?

Ans. Sources of Funds : -

1. Profit from operations
2. Issue of shares and debentures
3. Raising of long term loans
4. Sale of fixed assets
5. Non-Operating Incomes

Uses of funds : -

6. Loss from Operations
7. Purchase of fixed Assets
8. Redemption of Debentures and Preference shares
9. Repayment of long term loans
10. Payment of tax & dividend

Q.4 What is meant by funds from operations. How is the amount of funds from operations computed?

Ans. Funds from operations are profits which are computed after adding non-cash expenses and non-trading losses and deducting non-trading incomes.

Calculation of funds from Operations: Format

Q.5 Give the format of Schedule of Changes in Working capital and funds flow Statement :

Ans. The statement of schedule of changes in individual items of current assets and current liabilities b/w dates and their effect on working capital.

- Increase in current assets increases working capital.
- Decrease in current assets decrease working capital.
- Increase in current liabilities decreases working capital.
- Decrease in current liabilities increases working capital.

Statement of Schedule of Change in Working Capital

Item	Previous Year	Current Year	Effect on Increase	
			Increase	Decrease
Current Assets :	Rs.	Rs.	Rs.	Rs.
Cash at Bank	-	-	-	-
Cash in Hand	-	-	-	-
Stock in trade	-	-	-	-
Debtors	-	-	-	-
Bills Receivable	-	-	-	-
Advance Payment	-	-	-	-
Short-term Investment	-	-	-	-
Prepaid Expenses	-	-	-	-
Accrued Income	-	-	-	-
Total (a)				
Current Liabilities :				
Short-term loans	-	-	-	-
Bank overdraft	-	-	-	-
Creditors	-	-	-	-
Bills payable	-	-	-	-
Outstanding expenses	-	-	-	-
Unclaimed Dividend	-	-	-	-
Total (b)				
Net working capital (a)-(b)	-	-	-	-
Increase/Decrease in Working Capital	-	-	-	-
	-	-	-	-

Funds Flow Statement (In Account Form)

Sources of Funds	Amount Rs.	Uses of funds	Amount Rs.
Funds from Operations	-	Loss from Operation	-
Issue of Shares	-	Redemption of Preference shares	-
Issue of Debentures	-	Redemption of Debentures	-
Raising long-term loans	-	Repayment of long term loans	
Sale of Investments	-	Purchase of fixed Assets/Investments	-
		Payment of Dividend	
		Increase in Working capital	

Q.6 Show the treatment of 'Major adjustments while preparing funds flow statement?

Ans. Following are the major adjustment which should be considered while preparing funds flow statement :

1. Depreciation

(i) When provision for depreciation is given in B/s

Example :

			Opening	Closing
Assets	:	Machinery	410000	540000
Liabilities	:	Prov. For Depreciation	90000	130000

Additional Information : Machine was sold for Rs. 25000, cost Rs. 40000 and accumulated dep. Was Rs. 8500.

Provision for Depreciation

To Machinery	8500	By balance b/d	90000
To balance c/d	130000	By P& L a/c	48500
	138500		138500

Machinery A/c

To balance b/d	410000	By bank a/c (sale) By Prov. For dep. By P& L a/c (loss) By bal c/d	2500 8500 650 540000
	580000		580000

(ii) If provision for Depreciation is given in additional information and fixed assets are shown at written down value (after deducting depreciation) in the balance sheet as :

In additional Information		In Balance Sheet	
Prov. for Depreciation	10000	20000	Machinery 30000	40000

Machinery A/c

To balance b/d (30000 + 10000	40,000	By balance c/d (20000 + 40000	60000

Provision for Depreciation A/c

To balance c/d	20000	By balance b/d By P & L a/c (dep.)	10,000 10000

2) Sale of machinery : Example

Balance Sheet

	31.12.98	31.12.99
Fixed Assets at cost (gross Value)	90, 00,000	10, 00,000
Less : Depreciation	10, 00, 00	20, 00, 00
	8, 00,000	8, 00,000

Additional Information :

1) Rs. 1,0,00, 00 Shares were issued to vendors of F.A.
2) A machine costing Rs. 50,000 book value Rs. 30,000 as at 31 st Dec. 99 was disposed off for Rs. 20,000.

Fixed Assets A/c

To balance b/d	9,000,00	By bank (sale)	20,000
To Share Capital	10,0000	By loss (P & L)	10000
To bank A/c (pur.)	50000	By depreciation	20000
		By balance c/d	10,00,000
			1050,00

Provision for Depreciation

To fixed Assets	20,000	By balance b/d	100000
To balance c/d	20,00,00	By P & L a/c (current year dep.)	120000
	220000		220000

3. Provision for taxation :

(a) Treated as a current liability : It is shown in the statement of changes in working capital & any tax paid by the firm during the year is ignored. Amount provided will not be added back to meet profit.

(b) Treated as fixed liability :

Balance Sheet

Provision for tax 10,000 20,000

Additional information : 2,000 tax paid.

Provision for Tax

To cash (Tax paid)	2000	By balance b/d	10,000
To balance c/d	20,000	By P & L A/c (Prov. made)	12,000

4. Tax payable. Divided payable & unchained dividend.
They are always treated as current liability.

5. Purchase / Sale of Investment:

- Investment in marketable securities or government securities representing temporary investment or shot term investment is treated as current assets.
  Effect: Any loss or gain on sale of investment
  (Marketable securities) does not require any adjustment in the profits for calculating funds from operations.
- Investment is shares or debentures of other companies or subsidiary companies i.e. long term or trade investment are treated as fixed assets.
  Given in B/S.
  Investment long term 30000 80000

  Additional Information: Investment costing Rs. 30000 were sold for Rs. 28000.

In FFO	In FFS
Add. Loss on sale of Investment (2000)	Sale of investment (source)

6. Proposed Dividend: Proposed Divided can be treated as

(i) As a current liability: - Proposed dividend will be shown in the statement of changes in working capital along with other current liabilities.

(ii) As an appropriation of profits : - Proposed dividend will not be shown in the schedule of changes in working capital, but the dividend paid during the year (opening balance) is shown as application of fund in the fund flow statement.

Further the amount of proposed dividend for current year (closing balance) shall be added in not profit in FFO>

In F F O	In F F S (application)
Add: Closing Balance of Proposed Dividend	Opening Balance of Proposed Dividend

7. Interim Dividend : - The amount of dividend shown as an application in F F S and in the debit side of F F O (add in net profit)

In F F O	In F F S (Application)
Add : Interim Dividend	Interim Dividend Paid

8. Increase / Decrease in share capital and long term liabilities: Increase in share capital or long term liabilities during the year result in a source of funds. The redemption of preference share and buy back of equity shares or debentures is an application of funds. If shares or debentures are issued to finance the purchase of assets or conversion (debentures in the shares) there is neither any source nor any use of funds. Further the issue of shares or stock dividend is also not a source of funds.

Chapter9

Cash Flow Analysis

Q.1 What is a cash flow statement? Describe its main uses.

Ans. The cash flow statement reveals the changes in cash poison of the firm. It shows the movement of cash, into and out of the business, by listing the sources of cash receipts and the uses that have been made of cash. Transactions which increase the cash position are termed as 'inflows' of cash and those which decrease the cash position are termed as 'outflows' of cash.

Uses or significance of cash Flow Statement

1. Reflects the movement of cash – With the help of this statement the causes for the increase or decrease in cash are analyzed. It also explains the reason why the business has run out of money, despite the fact that the business has made a profit, or it has surplus of cash when the business has incurred a loss.
2. Helpful in Internal financial Management – Cash is the basis of carrying on business operations, the protected cash flow statement for the future period should enable the management to formulate future financial plans and helps in the financial operations of the business.
3. Helpful in controlling – Analysis of cash flow statement helps in controlling the cash balance of business by comparing the projected statement with the actual cash flow statement.
4. Helpful in short – term financial decisions – Forecasting of cash in short – term financial decisions reveals the position of liquidity of the firm and guides the analyst that in such position which transaction should be carried and which should not be carried.
5. Helpful in forecasting – Study of cash flow statements of different years helps in forecasting. This study facilitates focusing on the trend of movement that would have gone undetected otherwise.

Q.2 Distinguish between cash flow statement and funds flow statement.

Ans. Difference between cash flow and fund Flow state

Basis	Cash Flow Statement	Funds Flow statement
1. Meaning of fund	Funds mean only cash which is a component of net current assets.	Fund means net working capital.
2. Objective	Objective of cash flow statement is to know about the changes occurred in cash position between two balance sheet dates.	The objective of funds flow statement is to know about the changes occurred in net working capital between two balance sheet dates.
3. Basis of Preparation	Increase in current liability or decrease in current assets (except cash) results in cash or vice-versa	Increase in current liability or decrease in current asset results in a decrease in net working capital or vice-verse
4. Effect of Transaction	Effect of a transaction on cash is considered	Effect of a transaction on net working capital is considered
5. Utility	Cash Flow statement is useful fore short –term analysis.	Funds Flow statement is more useful for long-term analysis.
6. Statement of changes in working capital	No such statement is prepared repeatedly in cash flow statement.	A separate statement for changes in working capital is prepared.
7. Cash balance	Opening and closing balance of cash are shown in cash flow statement	Such balances of cash are shown in statement of working capital.

Q.3 Give a detailed format of cash Flow 'Statement as per As-3

Ans. Format of Cash flow Statement

Cash flow statement (Direct method)
For the year ended ……

Chapter 10

Capital Budgeting

Q.1 What do you understand by capital budgeting? Discuss the importance of capital budgeting.

Ans. Capital budgeting is that technique of management in which the planning of capital expenditures of the firm is done in such a way that the objective of the firm is achieved. It includes the long-term planning for financing of fixed assets including land, building, Plant, Machinery etc.

Importance of capital budgeting: -

1. It shows the possibilities of increasing production faculties for meeting the additional sales shown in the sales budget.
2. It shows the comparative position of available alternate assets for the replacement of obsolete assets and is also helpful in selection of the best assets.
3. It is helpful in appraising the profitability of fixed assets.
4. It is helpful in long term financial planning and policy formulation.
5. It is a good source of information of right time purchase of fixed assets and their financing.
6. It gives the necessary information for cash budgeting cash budgeting becomes very easy with the help of capital expenditure budget.
7. It is helpful in cost reduction and cost control.
8. The firm can make a sound depreciation and replacement policy.

Q.2 What factors should be considered while taking capital Budgeting Decisions?

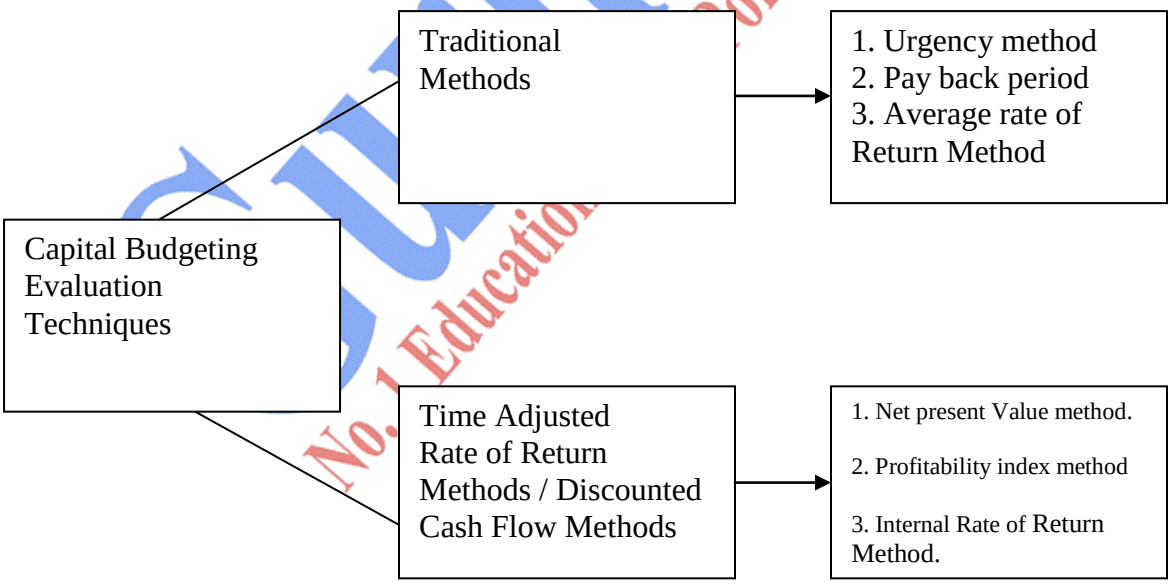
Ans. The capital expenditure decisions have their effect for a number of years. They should be taken after considering following factors: -

1. Net investment outlay or total cash outflows : -
   Net investment is the total amount of money to be invested in a project; the net investment includes the purchase price of the assets, transportation charges, establishment expenses etc.
2. Net cash inflows or benefits – In capital expenditure Decisions, after the computation of net investment amount or net cash outflows, the future net cash inflows or benefits are calculated. The Net cash inflow means the 'The net profit after tax but before depreciation'.

3. Project life – Every project has a definite life and in which there is an expectation of earnings. The determination of life is done on the basis of the nature of assets, its use, maintenance and technical changes. The total physical life is expressed by the suppliers of the asset while the economic life is determined by the users. This can be more or less than the physical life of the asset.
4. Desirable minimum rate of return – This is the minimum rate of return at which the capital investment decision will be taken If return is less, than It will not be accepted.
5. Opportunity Cost – The opportunity cost of investment proposal is the income foregone from the alternative use on account of acceptance of the project.
6. Risk of Obsolescence – The technical developments are very fast, therefore the machines become obsolete and the development of new methods and machines is taking place.

Q.3 Critically examine the various methods of evaluation of capital budgeting techniques.

Ans. There are various techniques or methods used for the evaluation of capital expenditure decisions as shown below: -



I Traditional Techniques: -

(A) Urgency Method – Under this method, capital projects are accepted on the basis of emergency requirements or crisis conditions. Sometimes the project that cannot be postponed is undertaken first.

(B) Payback Period Method – This method is also called pay-out and pay-off method. The period in which we get the invested amount back is called pay-back period On the basis of net cash inflows, the pay-back period of investments known.

Merits: -

1. Simple
2. Important method for firms having shortage of cash.
3. Risk of obsolescence
4. More accurate estimates.
5. Less Risk
6. Economical

Demerits: -

1. More importance to pay back of invested funds.
2. Does not consider the income received after the pay back period
3. Ignores cost of capital
4. Does not 'consider the time factor.
5. Does not consider scrap value.
6. Does not measure risk.
7. More emphasis on cash inflows of initial years.

Suitability: -

1. When firm has limited funds and do not want to raise additional funds.
2. When cash earning capacity is low and the project has been financed by loan which has to be repaid in short period.
3. For projects where there are chances of obsolescence due to industrial & technological development.

Calculation of Pay Back Period

i) When cash inflows are even

$$\text{Pay back period} = \frac{I}{C}$$

I = Initial Investment

C = Annual cash Inflow

ii) When cash inflows are uneven

First calculate cumulative cash inflows and then apply the formula:

Pay Back Period = Completed Years + I - Cumulative Cash Inflow in Completed years

Cash Inflow in Pay Back Year

Improvement in pay Back period

i) Post pay Back Profitability = Total cash Inflow in life – Initial investment

Or

= Annual Cash inflow (Total life - Pay back period)

ii) Pay Back Reciprocal = 1/pay back period X 100
It is also called 'Profitability Rate' or Time adjusted Rate of return' of the project.

iii) Discounted pay back period – It refers to the number of years required to recover the initial investment from the discounted cash flows. The cash inflows are multiplied by the present Value (or Discount Factor) of rs. 1 & then pay back period is calculated.

iv) Average Rate of Return Method
This is also called as accounting method or return on investment or average rate of return or unadjusted rate of return method.

$$ARR = \frac{\text{Average Annual Income after Tax \& Depreciation}}{2} \times 100$$

Merits: -
1. Simple
2. Consider whole life of project
3. Test of profitability.
4. Considers net income after depreciation
5. More useful for analysis of ling term projects.
6. Best use of wealth.

Demerits: -
1. Does not consider time value of money
2. Profits affected by micro factors are not tested.
3. It is difficult to determine the fair rate on investment

4. Concepts of investment and income are vague.

II Discounted Cash flow Techniques: -
Methods based on time Adjusted Rate of Return

(A) Net present value method: -

This is also called as excess present value method or net gain method. In this method, the cash inflows received in future are discounted with required earning rate to determine their present value. This present value is compared with the cost of the project or investment.

Following steps are taken in this method: -

1. Determine the minimum rate of return – In this method management has to decide the minimum required rate of return on firm's investment. This rate is used as discount rate for cash flows.
2. Computation of Present Value – With the help of present value tables the firm calculates present values of future cash flows.
3. Computation of Net Present Value : -

NPV = PV of cash inflows – Initial investment / Present value of Cash outflows.

$$\text{Present Value factor} = \frac{1}{(1+r)^n}$$

R = Rate of interest or discount rate
N = No. of years.

(B) Profitability Index or Benefit – Cost Ratio

The biggest disadvantage of N P V is that in this method those projects cannot be valuated in which there is huge difference in initial capital Investment.

For this profitability Index or Benefit cost Ratio is used We should accept the project if its PI is more than 1 and reject it if it is less than 1.

$$\text{P I} = \frac{\text{Present Value of Cash Inflows}}{\text{Present Value of cash outflows.}}$$

(C) Internal Rate of Return Method: -

In present value method and profitability index method, the expected rate of return is already known, So the present value of future earnings can be calculated quite lazily.

If we don't know the expected rate of return then the future value of cash inflows should be mad equal to the present value of initial investment.

For this purpose the rate used, is also called discounted cash flow rate, internal orate of return, time adjusted Rate, Yield rate etc.

$$R\ R = L\ D\ R + \frac{P_1 - Q}{P_1 - P_2} X\ (H\ D\ R - L\ D\ R)$$

L D R = Lower Discount Rate
H D R = Higher Discount Rate
P_1 = Present value at L D R
P_2 = Present value at H D R
Q = Initial investment

A rough estimation of /R R can be done by calculating:

$$P.V.\ Factor = \frac{Initial\ Investment}{Average\ Annual\ Cash\ Inflow} X\ 100$$

(D) Terminal Value Method: -

This is very simple method. In this method it is assumed that whatever cash inflows are received these are invested in other projects on a certain rate of return for the period of present projects' life.

Q.4 What is the difference between net present value method and internal rate or return method?

Ans.

S.No.	Net Present Value	Internal Rate of Return
1.	Interest is a known factor	Interest is unknown factor.
2.	Re-investments assumed at cut – off rate.	It is assumed to be at the I R R.
3.	It attempts to find out the amount which can invest so that its projected earning may be sufficient to repay the amount along with interest.	The object ot king out the maximum rate of interest at which the amount invested could be repaid out of cash inflows from the project.
4.	Cash inflows are discounted at a predetermined rate.	Cash inflows are discounted at a suitable rte by trial and error method

Cost and Management Accounting

Unsolved Paper – 2010

Time Allowed : 3 Hours ***M.M. – 100***

Attempt Five Question in all. Question Nos. I and 2 are compulsory.

Part-I

Q.1 Answer all the ten question. All question carry equal marks (Answer limit upto 50 words each) 2 x 10 = 20

(i) What is operation cost?

(ii) Give items which are not included in cost.

(iii) What is meant by variable overhead? Give any three examples.

(iv) What do you mean by absorption or recovery of overheads?

(v) What is meant by retention money in contract costing.

(vi) Calculate on the basis of the following information?

(a) Absolute Tonne kilomets.

(b) Commercial tone kilometer

Route of Journey	Distance (Kilometer)	Weight of Goods (Tonnes)
(1) Jaipur to Ajmer	130	20
(2) Ajmer to Bhilwara	137	16
(3) Bhilwara to Udaipur	200	10
(4) Udaipur to Jaipur	467	-

(vii) Describe the main characteristics of management accounting.

(viii) Differentiate between Cash Flow Statement and Cash Budget.

(ix) Describe the limitations of pay-back Methods.

(x) State the meaning of risk and uncertainty.

Q.2 Answer all five question. All question carry equal marks.
(Answer limit upto 100 words each) 5 x 4 = 20

(i) There were 4000 workers in a factory on Ist January, 2009 New entrants in service during the year were 200 leavers were 100. Calculate Labour Turnover Rate and Labour Flux Rate.

(ii) The production cost of 1000 units of an article is as follows:

	Rs.
Material	8,000
Wages	6,000
Fixed and Variable overhead	4,000

The company produced 5000 units. The selling price per unit is Rs.20 and profit is Rs.20,000. Calculate the amount of fixed and variable overheads.

(iii) Explain the treatment of interest and dividend in Cash Flow Statement.

(iv) Explain the meaning of business risk, investment risk, portfolio risk and financial risk.

(v) Standard Mix for one unit of product 'X' is:

Material A 150 kg @ Rs.10 per kg.

Material B 175 kg @ Rs. 20 per kg.

Actual mix used was:

Material A 160 kg @ Rs. 20 per kg.

Material B 165 kg @ Rs. 18 per kg.

Calculate material @ variance.

Part-II

Attempt any three question. All question carries 20 marks.

Q.3 The following are the …….of receipts and issues of an item of stores in a factory for the months of December, 2006:

Receipts			Issues	
Date	**Quantity**	**Rate**	**Date**	**Quantity**
1	500 kg	Rs. 20 (Opening Balance)	3	70 kg
14	20 kg	Rs. 20 (Return)	4	100 kg
20	200 kg	Rs. 22	7	80 kg
27	15 kg	Rs. 20 (Return)	16	200 kg
			25	200 kg

Issues are to be priced on the basis of first in first out. The stock verifier of the factory reported a shortage of 5 kg on 15th December and 7 kg December. Prepare a stores Ledger Account

Q.4 A firm of business contractors began to trade on 1st April, 2008. The following was the expenditure on a contract for Rs.3,00,000:

	Rs.
Material issued to contract	50,000
Plant for use at the contract	15,000
Wages incurred	81,000
Other expenses incurred	5,000

Cash received on account upto 31st March, 2009 amounted to Rs.1,28,000 being 80% of the work certified of the plant and materials charged to the contract, plant costing Rs.3,000 and materials costing Rs. 2,500 were lost at the beginning of the contract. On 31st March, 2009 plant which had cost Rs.2,000 was returned to the store, the cost of work done but uncertified was Rs. 1,000 and materials costing Rs. 2,300 were in hand at site.

Charge 15% depreciation on plant and reserve ½ profit received.

Prepared the Contract Accounts, Work in Progress Account and the Contractee's Account. Also show how work-in-progress will appear in the balance sheet.

Q.5 A company budgets for a production of 1,50,000 units. The variable cost per unit is Rs. 14 and fixed cost isRs.2 per unit. The company fixes its selling price to fetch a profit of 15% on cost.

(a) Ascertain Break-even point.

(b) Ascertain P/V ration.

(c) If the selling price is reduced by 5%, how will it affect the BEP and the P/V ratio?

(d) If a 10% increase of profit is desired than the budgeted, what should be the sales at the reduced selling price?

Q.6 "Management Accounting is concerned with accounting information that is useful to management". Comment and define management accounting. How does it differ from financial accounting?

Q.7 What is meant by simulation analysis Technique? What are its merits and demerits? Explain its procedures.

Unsolved Paper – 2009

Time Allowed : 3 Hours ***M.M. – 100***

Attempt Five Question in all. Question Nos. I and 2 are compulsory.

Part-I

Q.1 Answer all the ten question. All question carry equal marks (Answer limit upto 50 words each) 2 x 10

(i) In how many parts has the indirect cost been divided? Name them.

(ii) Why are cost record kept?

(iii) Give the formula for determinations of maximum stock level?

(iv) Why is overtime necessary? Give two reasons.

(v) Mention the names of the bonus schemes for wages payments.

(vi) What is meant by fixed overhead? Give any three examples.

(vii) What do you mean by absorption or recovery of overheads?

(viii) Give the names of major tools and techniques of management accounting.

(ix) Distinguish between current ratio and liquidity ratio.

(x) Enumerate the techniques of risk measurement.

Q.2 Answer all five question. All question carry equal marks.
(Answer limit upto 100 words each) 5 x 4 = 20

(i) How is Income Tax treated in Cash Flow Statement?

(ii) Calculate material mix variance From the following data:

Material	Standard Consumption	Actual Consumption
A	400 units @ Rs. 12	320 units @ Rs. 13
B	200 units @ Rs. 10	280 units @ Rs. 10

It is decided to increase the consumption of material B by 30% and reduce the of A by 15% to improve the quality of the product.

(iii) The following information in available relating to a contract for the half year (25 weeks) ending 31st Marc, 2008 :

Wages paid Rs. 1,00,000

Supervisor's Salary paid Rs. 11,000

The work commenced on 1st oct. 2006. The wages of workers for one weak and salary of supervisors for one month were due at the end of the period. Calculate the amount of wages and supervisors salary to be charged on contract.

(iv)

Standard Time	30 hours.
Time taken	20 hours
Wage Rate	Rs. 10 per hour.

Ascertain the amount of bonus and total amount of wages under Halsay premium plan.

(v) A refrigerator manufacturer purchased 800 units of a certain component from B. His annual usage is 800 units. The order placing cost isRs.100 and the cost of carrying one unit for a year is Rs.4 calculate the Economic Order quantity.

Part-II

Attempt any three question. All question carry equal marks.

Q.3 Explain the term 'Machine Hour Rate' Give its merits and demerits. Critically examine its suitability for absorption of factory overhead in a labor intensive factory.

Q.4 The following overhead expenses relate to a cost centre operating at 50% of normal activity. Draw up a flexible budget for the cost centre for operating at 75%, 100%, and 125 % of normal capacity.
Indicate the basis upon which you have estimated each item of expenses for different operating levels:

	Rs.
Foreman	60
Assistant foreman	40
Inspectors	65
Shop Laborers	40
Machinery	100
Defective Work	25
Consumable Stores	20
Overtime Bonus	
Machine Depreciation	110
	460

Flexible Budget

Q.5 Jaipur Transport Company has been given a 20 km. long route to run a bus. The bus costs the company a sum of Rs.50,000. It has insured at 3% per annum and the annual froad tax amounts to Rs. 1000. Garage rent is rs. 100 per month. Annual repair is estimated to cost Rs. 1000 and the bus is likely to last for 5 years. The salary of the driver and the conductor will be Rs.150 and Rs. 100 per month respectively in addition to 10% of the taking as commission (to be shared equally). The manager's salary isRs. 350 per month and stationery will cost Rs. 50 per month. Diesel and oil will cost Rs. 25 per 10 kms. The bus will make 3 round trips per day carrying on an average 40 passengers in each trip. Assuming 15% profit on taking, calculate the bus fare to charged from each passenger per km. The bus will run on an average 25 days in a month.

Q.6 On the basis of the following information in respect of an engineering company, what is the product mix which will give highest profit attainable?

Product Manufactured	A	B	C
Raw material per unit	10 kg.	6 kg.	15 kg
Labor hours per unit @ Re.1 per hour	15	25	20
Sale price per unit	Rs.125	Rs. 100	Rs,. 200
Maximum production Possible	6,000 Units	4,000 Units	3,000 Units

1,00,000 kg. raw material are available @ Rs. 10 per kg. maximum labor hours 1,84,000.

Q.7 (a) "Management Accounting is concerned with accounting information that is useful to management". Comment & define management accounting.

(b) Differentiate between financial risk & business risk.

Unsolved Paper – 2008

Time Allowed : 3 Hours ***M.M. – 100***

Attempt Five Question in all. Question Nos. I and 2 are compulsory.

Part-I

Q.1 Answer all the ten question. All question carry equal marks. (Answer limit upto 50 words each) 2 x 10

(i) Which methods of cost accounting will be suitable for the following?

(a) Cement Industry

(b) Rubber Tube and Tyre Industry.

(c) Chemical Industry

(d) Water and Electricity Supply;

(e) Patent Food Material Industrial

(i) Television Industry

(ii) State alternative names of the following:

(a)Factory Overhead;

(b) Office Overhead

(iii) Give items, are not included in the cost.

(iv) What is meant by fixed overhead? Give any three examples

(v) What is the meaning of "Standing charges" in operating costing?

(vi) Give the names of major tools and techniques of management accounting.

(vii) Differentiate between cash flow statement and cash budget.

(viii) Distinguish between current Ratio and Liquidity Ratio.

(ix) Differentiate between risk and uncertainty.

(x) What is meant by re-order level?

Q.2 Answer all five question. All question carry equal marks.
(Answer limit upto 100 words each)

(i) What is Flux Rate of Labour Turover? How is it determined ?

(ii) The production cost of 1000 units of an article is as follows:

	Rs.
Material	8,000
Wages	6,000
Fixed and variable overhead	4,000

The company produced 5,000 units. The selling price per unit is Rs.20 and profit is Rs.20,000. Calculate the amount of fixed and variable overheads.

(iii) Standard mix for one unit of product 'X' is:

Material A 150 kg @ Rs. 10 per kg.

Material B 175 kg @ Rs. 20 per kg.

Actual Mix used was:

Material A 160 kg @ Rs. 20 per kg.

Material B 165 kg @ Rs. 18 per kg.

(iv) Calculate margin o safety ratio from the following information:

Sales Rs. 2,00,000

Variable cost Rs. 1,50,000

Fixed cost Rs. 40,000

(v) Determine which company is more profitable and why?

	X Ltd.	Y Ltd.
Net profit Ratio	4%	5%
Sales/Capital Employed	6 times	4 times

Part-II

Attempt any three question. All question carry equal marks.

Q.3 Differentiate between departmenal rates and blanket rates of overhead aborption. Why departmental rates are considered superior than the blanket rates?

Q.4 Differentiate between a cost sheet and a production account. Mention the objects and advantages of preparing a cost sheet.

Q.5 Rinku Bros. obtained a contract for building a factory for Rs. 10 lakhs Building operations started on 1st April, 2006 and upto the end of March, 2007 they received from the contractee a sum of Rs. 3.90 lakhs being 75% of the amount due on the surveyor's certificate. The following additional information is given from the books of contractors.

	Rs.
Stones issued to contract	2,00,000
Stones at sit on 31.03.2007	10,000
Wages paid	1,80,000
Plant purchased for the contract	2,00,000
Direct expenses	35,000
Overhead allocated to the contract	15,000
Work finished but not yet certified (cost)	12,000

Plant to be depreciated at 15% p.a.

You are required to prepare an account showing the profit or loss on contract for the year ending 31st March, 2007. Also states as to what amount of profit should be transferred to p 7 l Account by the contractor on 31st March, 2007.

Q.6 Complete the balance sheet in form given below using the under mentioned information:

Sales Rs. 752 Laksh

Total assets Turnover = 6

Fixed Assets Turnover = 10

Current assets turnover	= 15
Inventory Turnover	= 40
Debtors Turnover	= 30
Total Assets / Net worth	= 2.5
Debt / Equity	= 1
Current Ratio	= 2

Balance Sheet

Net worth	Fixed Assets ……
Debts ……..	Current Assets: …….
Current Liabilities ……...	Inventories ……
	Debtors……
	Liquid Assets ……..

Q.7 A limited company is considering to invest in a project requiring initial investment of Rs. 2,00,000. The projct's working life in 3 years. The discount factors may be taken as 10% cash inflows during the life of the project with its probabilities are given below:

Approaches	**First Year**		**Second Year**		**Third Year**	
	Cash Inflow Rs.	Probability Rs.	Cash Inflow Rs.	Probability Rs.	Cash Inflow Rs.	Probability Rs.
Optimistic	1,60,000	0.25	1,60,000	0.25	1,60,000	0.50
Pessimistic	60,000	0.25	60,000	0.50	60,000	0.25
Most Likely	1,20,000	0.50	1,20,000	0.25	1,20,000	0.25

Find out net present value of the project and state whether investment should be made or not.

Unsolved Paper – 2007

Time Allowed : 3 Hours ***M.M. – 100***

Attempt Five Question in all. Question Nos. I and 2 are compulsory.

Part-I

Q.1 Answer all ten question. All question carry equal marks. (Answer limit upto 50 words each) 2 x 10

(i) What do you mean by cost?

(ii) Write two object of Materials Control.

(iii) What is meant by Semi-variable overheads?

(iv) Define Management accounting.

(v) What do you mean by Ratio Analysis?

(vi) What is Payback Period?

(vii) What is meant by Contract Price?

(viii) What are project risks?

(ix) What is sensitivity analysis ?

(x) What is simulation?

Q.2 Answer all the five question. All question carry equal marks (Answer limit upto 100 words) 5 x 4 = 20

(i) Name any four methods of costing.

(ii) Explain Halsay Bonus scheme in brief.

(iii) Give four examples of variable overheads.

(iv) What are capital structure ratios?

(v) What are financial risks?

Part-II

Attempt any three question. All question carry equal marks.

Q.3 What do you mean by labour turnover? Discuss various methods of measuring labour turnover?

Q.4 The ratio of variable costs of sales is given to be 60%. The break even point occurs at 80% of sales. Find the sales when the fixed costs are Rs.2,00,000. Determine profit at 90% and 10% of sales.

Q.5 Explain the scope of management accounting. Discuss how it serves management needs?

Q.6 What is meant by Monte Carlo Simulation? Discuss its steps and application uses.

Q.7 Calculate internal rate of return for project X. The details of the project are as follows:

Year	1	2	3	4	5	6
Cash Inflow (Rs.in Thousand)	2	3	4	5	2	1
1Discount Factor at 10%	0.909	0.826	0.751	0.683	0.621	0.564
Discount Factor at 12%	0.893	0.797	0.712	0.636	0.567	0.507

The initial cost of the project is Rs.12,000.

Solved Paper – 2006

Time Allowed : 3 Hours ***M.M. – 100***

Attempt Five Question in all. Question Nos. I and 2 are compulsory.

Part-I

Q.1 Answer all ten question. All question carry equal marks. (Answer limit upto 50 words each) 2 x 10

(i) What are different methods of absorption of Overhead of factory?

(ii) What is meant by Sub-Contract Cost?

(iii) How works is progress is shown in Balance Sheet?

(iv) What do you understand by Absolute Ton Kilometer?

(v) Give basic formula for valuation of Abnormal Wastage and Abnormal Effective.

(vi) Name the methods of Trade Analysis.

(vii) Name four factors determining working capital.

(viii) What do you mean by safety stock?

(ix) Define ABC Analysis.

(x) What do you mean by Average Collection Period?

Q.2 Answer all the five question. All question carry equal marks (Answer limit upto 100 words each) 5 x 4 = 20

(i) Current ratio is 2.2 : 1 and net working capital is 36,000 Calculate current assets and current liabilities.

(ii) Annual usages 600 kg. price per kg. 20 cost per order 12 and storage cost 20%. Calculate EOQ.

(iii) PV ration 50%
Margin of safety 40%
Total sales Rs. 50,00,000
Calculate profit.

(iv) Ratio of variable cost to sales 60%
BEP. 80% of sales
Fixed cost Rs. 2,00,000
Calculate profit at 960% capacity.

(v) Explain Joint Product and by Product

Part-II

Attempt any three question. All question carries 20 marks.

Q.3 What is the concepts of working capital? What factor determine the needs of working capital and how is it measured? s

Q.4 Prepare a statement of charges in working capital and funds flow statement from balance sheet of X ltd.

Balance Sheet X Ltd.

Liabilities	2004	2005
Share Capital	2,00,000	2,00,000
General Reserve	65,000	70,000
Creditors	15,000	12,800
Bills Payable	6,000	4,000
Provision for Tax	15,000	20,000
Provision for doubtful debts	1,000	1,200
	3,02,000	3,08,000

Assets	2004	2005
Goodwill	25,000	20,000
Building	90,000	80,000
Machine	75,000	80,000
Investment	15,000	18,000
Stock	60,000	50,000
Debtors	20,000	22,000
Bills Receivable	5,000	7,000
Bank	12,000	31,000
	3,02,000	3,08,000

Q.5 Calculate all the possible labour variance.

Standard

Male : 180 workder @ Rs. 3 per hour

Female: 120 worker @ Rs. 2 per hour

Actual:

Male; 160 worker @ Rs. 3.5 per hour

Female : 140 worker @ Rs. 2.5 per hour

Standard hours: 1,000 hours

Actual hours: 900 hours

Production : 10,000 units

Standard loss; 2 %

Actual loss : 1,800 units

Q.6 The fancy Toys Company manufactures two type of toys X and Y.

Total Cost:

Direct Material Cost : Rs. 2,00,00

Direct Wages Cost : Rs. 1,12,000

Production overheads: Rs. 48,000

Adjustment:

(a) Direct materials per toy and X is double as direct material cost per unit on Y

(b) Direct wages costs per toy for Y is 60% for X

(c) Production overhead per unit 30 paisa

(d) Office overheads 200% of direct labour cost

(e) Selling expenses 25 paisa per unit sold

(f) Production during year: X : 40,000 unit Y : 1,20,000 units

(g) Unit sold: X: 36,000 units Y : 1,00,000 units

(h) SP per unit : X : Rs. 7

Prepare statement of cost pre unit and profit per unit.

Q.7 Two alternative capital expenditure proposal each costing. Rs. 1,00,000 provides the following expected net cash inflow:

Year	X Machine Rs.	Y Machine Rs.
1	30,000	10,000
2	40,000	30,000
3	50,000	40,000
4	30,000	60,000
5	20,000	40,000

Evaluate the proposal on the basis of:

(a) Pay back period method

(b) Post pay back profitability

(c) Average rate of return

(d) Net present value method

Use a discount rate 10% Discount factor at 10% for various years are as follows:

Year	**Discount Rate**
1	0.909
2	0.826
3	0.751
4	0.683
5	0.621

or

What are the object of a good costing system? How does it help the top management in controlling various costs?