Paper – 8: Cost Accounting & Financial Management

Question.1

(a) ABC Ltd. is having 400 workers at the beginning of the year and 500 workers at the end of the year. During the year 20 workers were discharged and 15 workers left the organization. During the year the company has recruited 65 workers of these, 18 workers were recruited in the vacancies of those leaving, while the rest were engaged for an expansion scheme. The labour turnover rate under separation method is :

(a) 22.20%
(b) 7.78%
(c) 4.00%
(d) 14.40%

Answer:

(b) - 7.78%

Average number of workers = (400 + 500)/2 =450

Separation method

$$= \frac{\text{No. of Separation during the period}}{\text{Av. no. of workers during the period}} \times 100$$

$$= \frac{20+15}{450} \times 100$$

= 7.78%

(b) A Manufacturer used 400 units of a component every month and he buys them entirely from an outside supplier @ ₹ 40 per unit. The order placing and receiving cost is ₹ 100 and storage and carrying cost is 10% of the value of stock. To get maximum benefit the firm should place order for how many units at a time?

(a) 300 units
(b) 490 units
(c) 450 units
(d) 500 units

Answer:

(b) - 490 units

$$= EOQ = \sqrt{\frac{2 \times \text{Annual Demand} \times \text{Ordering Cost}}{\text{Storage Cost}}}$$

$$= \sqrt{\frac{2 \times 400 \times 12 \times 100}{10\% \text{ of } ₹ 40}}$$

$$= \sqrt{\frac{9,60,000}{4}}$$

= 490 units

(c) Consider the following data pertaining to the production of a company for a particular month :

Opening Stock of raw material	**₹ 11,570**
Closing Stock of raw material	**₹ 10,380**

Purchase of raw material during the month	**₹ 1,28,450**
Total manufacturing cost charged to product	**₹ 3,39,165**

Factory overheads are applied at the rate of 45% of direct labour cost.
The amount of factory overheads applied to production is
(a) ₹ 65,025
(b) ₹ 94,287
(c) ₹ 1,52,624
(d) ₹ 60, 654

Answer:

(a) - ₹ 65,025

Raw material used = Op. Stock + Purchases – Cl. Stock
= ₹ 11,570 + ₹ 1,28,450 – ₹ 10,380 = ₹ 1,29,640

Manufacturing cost= Raw material used + Direct labour + Factory overhead
₹ 3,39,165= ₹ 1,29,640 + Direct labour + 45% of Direct labour
1.45 Direct labour = ₹ 2,09,525
Direct labour = ₹ 1,44,500

The amount of factory overhead = 45% of ₹ 1,44,500 = ₹ 65,025.

(d) Illustrate Indirect Expenses.

Answer:

Indirect Expenses are expenses which cannot be allocated but which can be apportioned to or absorbed by cost centres or cost units such as rent, insurance, municipal taxes, general manager salary and canteen and welfare expenses, power and fuel, cost of training new employees lighting and heating, telephone expenses etc.

(e) For a particular item of store, the following information are available:
Re-order level = 1600 units
Normal Consumption per week = 200 units
Re-order period = 2 to 4 weeks
Maximum Consumption will be:
(a) 600 units
(b) 500 units
(c) 400 units
(d) 300 units

Answer:

(c) - 400 units

Let Maximum Consumption will be a
Re-order level = Maximum Consumption × Maximum re-order period
1600= a × 4
Therefore,
4a = 1600
⇨ a=400

(f) For a department the standard overhead rate is ₹ 2.50 per hour and the overhead allowances are as follows:

Activity Level (Hours)	Budget Overhead Allowances (₹)
4,000	**11,000**
8,000	**19,000**

12,000	**27,000**

Calculate:

(i) Fixed Cost

(ii) The Standard Activity Level on the basis of which the Standard Overhead rate has been worked out.

(a) ₹ 5,000, 6,000 hrs.

(b) ₹ 4,000, 5,000 hrs.

(c) ₹ 3,000, 6000 hrs.

(d) ₹ 2,000, 4,000 hrs.

Answer:

(c) - ₹3,000, 6,000 hrs.

(i) Fixed Cost

$$\text{Variable Overhead per hour} = \frac{\text{HighLevelCost} - \text{LowLevelCost}}{\text{HighLevelHours} - \text{LowlevelHours}}$$

$$= [(27,000 - 11,000) / (12,000 - 4,000)]$$

$$= ₹ 2$$

$$\text{Fixed Cost} = 11,000 - (4,000 \times 2)$$

$$= ₹ 3,000$$

(ii) Standard Activity Level at which the Standard rate has been determined

= Fixed Cost /Fixed OH per hour

= 3,000 / (2.50 – 2)

= 6,000 Hours

(g) Vishnu Steels Ltd. has issued 30,000 irredeemable 14% debentures of ₹ 150 each. The cost of floatation of debentures is 5% of the total issued amount. The company's taxation rate is 40%. The cost of debentures is:

(a) 8.95%

(b) 7.64%

(c) 9.86%

(d) 8.84%

Answer:

(d) - 8.84%

	₹
Total issued amount (30,000 x ₹ 150)	45,00,000
Less: Floatation cost (₹ 45,00,000 x 5/100)	2,25,000
Net proceeds from issue	42,75,000

Annual interest charge= ₹ 45,00,000 x 14/100 = ₹ 6,30,000

$$K_d = \frac{I(1-t)}{NP} = \frac{6,30,000(1-0.40)}{42,75,000}$$

=0.0884 or 8.84%

(h) The balance sheet of ABC Ltd. Shows the capital structure as follows :

2,50,000 equity shares of ₹ 10 each; 32,000, 12% preference shares of ₹ 100 each; general reserve of ₹ 14,00,000; securities premium account ₹ 6,00,000; 25,000, 14% fully secured non-convertible debentures of ₹ 100 each.; term loans from financial institutions ₹ 10,00,000.

The leverage of the firm is:

(a) 67.2%
(b) 62.5%
(c) 59.8%
(d) 56.3%

Answer:

(c) - 59.8%

Fixed income funds = Preference share capital + Debentures + Term loans
= ₹ 32,00,000 + ₹ 25,00,000 + ₹ 10,00,000= ₹ 67,00,000

Equity funds = Equity share capital + General reserve + Securities premium
= ₹ 25,00,000 + ₹ 14,00,000 + ₹ 6,00,000= ₹ 45,00,000

Total funds used in the capital structure
= ₹ 67,00,000 + ₹ 45,00,000= ₹ 1,12,00,000

Leverage = (₹67,00,000/ ₹1,12,00,000) × 100
= 59.8%

(i) A company has obtained quotes from two different manufacturers for an equipment. The details are as follows :

Product	Cost (₹ Million)	Estimated life (years)
Make X	4.50	10
Make Y	6.00	15

Ignoring operation and maintenance cost, which one would be cheaper? The company's cost of capital is 10%.
[Given: PVIFA (10%, 10 years) = 6.1446 and PVIFA (10%, 15 years)= 7.6061]
(a) Make X will be cheaper
(b) Make Y will be cheaper
(c) Cost will be the same
(d) None of the above

Answer:

(a) - Make X will be cheaper

Make X
Purchase cost = ₹ 4.50 million
Equivalent annual cost = 4.50/6.1446 = ` 0.73235
Make Y
Purchase cost = ₹ 6.00 million
Equivalent annual cost = 6.00/7.6061 = ₹ 0.78884 million
Therefore, equivalent annual cost of make X is lower than make Y, make X is suggested to purchase.

(j) According to the second method of lending by a bank as per Tandon committee suggestion, the maximum permissible bank borrowing – based on the following information is :
Total current assets ₹ 40,000; Current assets other than bank borrowings ₹ 10,000; Core current assets ₹ 5,000.
(a) ₹ 22,500
(b) ₹ 20,000
(c) ₹ 16,250
(d) ₹ 18,500

Answer:

(b) - ₹ 20,000
MPBF under second method
= (75% current assets) – (Current liabilities other than bank borrowings)
= (₹ 40,000 x 75/100) – ₹ 10,000 = ₹ 20,000

Section A

Question.2

(a) A job can be executed either through workman M or N. M takes 32 hours to complete the job while N finishes it in 30 hour The standard time to finish the job is 40 hour
The hourly wage rate is same for both the worker In addition workman M is entitled to receive bonus according to Halsey plan (50%) sharing while N is paid bonus as per Rowan plan. The works overheads are absorbed on the job at ₹ 7.50 per labour hour worked. The factory cost of the job comes to ₹ 2,600 irrespective of the workman engaged.
Find out the hourly wage rate and cost of raw materials input. Also show cost against each element of cost included in factory cost.

Answer
Working notes:

1. Time saved and wages:

Workmen	M	N
Standard time (hrs)	40	40
Actual time taken (hrs)	32	30
Time saved (hrs)	08	10
Wages paid @ ₹ x per hr. (₹)	32x	30x

2. Bonus Plan:

	Halsey	Rowan
Time saved (hrs)	8	10
Bonus (₹)	4x	7.5x
	$\left[\frac{8\text{ hrs} \times ₹\ x}{2}\right]$	$\left[\frac{10\text{ hrs}}{40\text{ hrs}} \times 30\text{hrs} \times ₹\ x\right]$

3. Total wages:
Workman M: 32x + 4x = ₹ 36x
Workman N: 30x + 7.5x = ₹ 37.5x

Let Material Cost be y
Statement of factory cost of the job

Workmen	M ₹	N ₹
Material cost	y	y
Wages	36x	37.5x
(Refer to working note 3)		
Works overhead	240	225
Factory cost	2,600	2,600

The above relations can be written as follows:
36x + y + 240 = 2,600 …. (i)
37.5x+ y+ 225 = 2,600 …..(ii)

Subtracting (i) from (ii) we get
1.5x – 15 = 0
or 1.5 x = 15
or x = ₹ 10 per hour
On substituting the value of x in (i) we get y = ₹ 2,000
Hence the wage rate per hour is ₹ 10 and the cost of raw material input is ₹ 2,000 on the job.

(b) What do you understand by the term 'pre-determined rate of recovery of overheads'? What are the bases that are usually advocated for such pre-determination? How do over - absorption and under-absorption of overheads arise and how are they disposed off in Cost Accounts?

Answer

The term 'pre-determined' rate of recovery of overheads' refers to a rate of overhead absorption. It is calculated by dividing the budgeted overhead expenses for the accounting period by the budgeted base for the period. This rate of overhead absorption is determined prior to the start of the activity; that is why it is called a 'pre-determined rate'. The use of the pre-determined rate of recovery of overheads enables prompt preparation of cost estimates and quotations and fixation of sales prices. For prompt billing on a provisional basis before completion of work, as for example in the case of cost plus contracts, pre-determined overhead rates are particularly useful.

Bases Available: The bases available for computing 'pre-determined rate of recovery of overheads' are given below:-
(i) Rate per unit of output
(ii) Direct labour cost method
(iii) Direct labour hours method
(iv) Machine hour rate method
(v) Direct material cost method
(vi) Prime cost method.
The choice of a suitable method for calculating 'pre-determined rate of recovery of overhead, depends upon several facto₹ Some important ones are- type of industry, nature of product and processes of manufacture, nature of overhead expenses, organisational set-up, policy of management etc.

Reason for over/under absorption of overheads: Over-absorption of overheads arises due to one or more of the following reasons.
(i) Improper estimation of overhead.
(ii) Error in estimating the level of production.
(iii) Unanticipated changes in the methods or techniques of production.
(iv) Under-utilisation of the available capacity.
(v) Seasonal fluctuations in the overhead expenses from period to period.

Methods for absorbing under/over absorbed overheads: The over-absorption and under-absorption of overheads can be disposed off in cost accounting by using any one of the following methods:
(i) Use of supplementary rates
(ii) Writing off to costing profit & loss Account
(iii) Carrying over to the next year's account

(i) Use of supplementary rates: This method is used to adjust the difference between overheads absorbed and overhead actually incurred by computing supplementary overhead rates. Such rates may be either positive or negative. A positive rate is intended to add the unabsorbed overheads to the cost of production. The negative rate, however corrects the cost of production by deducting the amount of over-absorbed overheads. The effect of applying such a rate is to make the actual overhead get completely absorbed.

(ii) Writing off to costing profit & loss account: When over or under-absorbed amount is quite negligible and it is not felt worthwhile to absorb it by using supplementary rates, then the said amount is transferred to costing profit & loss Account. In case under-absorption of overheads arises due to factors like idle capacity, defective planning etc., it may also be transferred to costing profit & loss Account.

(iii) Carrying over to the next year's account: Under this method the amount of over/under absorbed overhead is carried over to the next period. This method is not considered desirable as it allows costs of one period to affect costs of another period. Further, comparison between one period and another is rendered difficult. Therefore, this method is not proper and has only a limited application. However, this method may be used when the normal business cycle extends over more than one year, or in the case of a new project, the output is low in the initial years.

Question.3

(a) A factory incurred the following expenditure during the year 20112:

		₹
Direct material consumed		**15,00,000**
Manufacturing Wages		**10,00,000**
Manufacturing overhead:		
Fixed	**4,00,000**	
Variable	**3,50,000**	**7,50,000**
		32,50,000

In the year 2013, following changes are expected in production and cost of production.

(i) Production will increase due to recruitment of 50% more workers in the factory.

(ii) Overall efficiency will decline by 10% on account of recruitment of new workers.

(iii) There will be an increase of 15% in Fixed overhead and 70% in Variable overhead.

(iv) The cost of direct material will be decreased by 5%.

(v) The company desire to earn a profit of 10% on selling price.

Ascertain the cost of production and selling price.

Answer:

Budgeted Cost Sheet for the year 2013

Particulars			**Amount ₹**
Direct material consumed		15,00,000	
Add: 35% due to increased output		5,25,000	
		20,25,000	
Less: 5% for decline in price		1,01,250	19,23,750
Direct wages (manufacturing)		10,00,000	
Add: 50% increase		5,00,000	15,00,000
Prime cost			34,23,750
Manufactured Overhead:			
Fixed	4,00,000		

Add: 15% increase	60,000		
		4,60,000	
Variable	3,50,000		
Add: 70% increase	2,45,000		
		5,95,000	10,55,000
Cost of production			44,78,750.00
Add: 1/9 of Cost or 10% on selling price			4,97,638.88
Selling price			49,76,388.88

Production will increase by 50% but efficiency will decline by 10%.
150 – 10% of 150 = 135%
So increase by 35%.
Note: If we consider that variable overhead once will change because of increase in production (From 3,50,000 to 5,95,000) then with efficiency declining by 10% it shall be 5,35,500 and then again as mentioned in point No. (iii) of this question it will increase by 70% then variable overhead shall be ₹ 5,35,500 × 170% = 9,10,350. Hence, total costs shall be ₹ 47,94,100 and profit shall be 1/9th of ₹ 47,94,100 = 5,32,678. Thus, selling price shall be 53,26,778.

(b) What are the essential features of an effective Wage Plan?

Answer:

The essential features of an effective Wage Plan may be enumerated as follows:

(i) It should be based upon scientific time and motion study to ensure a fair output and a fair remuneration.
(ii) There should be guaranteed minimum wages at a satisfactory level.
(iii) The wages should be related to the effort put in by the employee. It should be fair to both the employees and employer.
(iv) The scheme should be flexible to permit any necessary variations which may arise.
(v) There must be continuous flow of work. After completing one piece, the workmen should be able to go over to the next without waiting.
(vi) After a certain stage, the increase in production must yield decreasing rate so as to discourage very high production which may involve heavy rejections.
(vii) The scheme should aim at increasing the morale of the workers and reducing labour turnover.
(viii) The scheme should not be in violation of any local or national trade agreements.
(ix) The operating and administrative cost of the scheme should be kept at a minimum.

Question.4

(a) A company uses three raw materials P, Q and R for a particular product for which the following data apply:-

Raw Material	Usage per unit of product (Kgs)	Re-order Quantity (Kgs)	Price per Kg	Delivery in period (in weeks)			Re-order level (Kgs)	Minimum level (Kgs)
				Mini mum	Average	Maxi-mum		
P	10	10,000	0.10	1	2	3	8.000	
Q	4	5,000	0.30	3	4	5	4,500	
R	6	10,000	0.15	2	3	4		2,000

Weekly production varies from 175 to 225 units, averaging 200 units of the said product. What would be the following quantities:-

(i) Minimum Stock of P

(ii) Maximum Stock of Q

(iii) Re-order level of R

(iv) Average Stock level of P.

Answer:

(i) Minimum stock level of P

= Reorder Level - (Normal Usage x Avg. Delivery Time)

= 8,000 kgs - {(200 units x 10 kg) x 2 weeks} = 4,000 kgs.

(ii) Maximum stock of Q

= Reorder Level + Reorder Quantity - Minimum consumption to obtain delivery

= 4,500 kgs + 5,000 kgs - (175 units x 4 kgs x 3 weeks) = 7,400 kgs.

(iii) Reorder Level of R

Maximum reorder period x Maximum usage

= 4 weeks x (225 units x 6 kgs) = 5400 kgs.

OR

= Min. stock + (Avg. rate of consumption x Avg. Delivery Period)

= 2,000 kgs + {(200 x 6) x 3 weeks) = 5,600 kgs.

(iv) Average stock level of P

Minimum level + 1/2 Reorder Quantity

4,000 kgs + 1/2 x 10,000 = 9,000 kgs.

OR

(Minimum stock + Maximum stock) ÷ 2

(4,000 + 16,250)* ÷ 2 = 10,125 kgs.

(Reorder Level + Reorder Quantity) - (Min. consumption x Minimum Reorder Period).

8,000 + 10,000 kg - {(175 x 10 x 1} = 16,250 kgs

(b) From the following details of stores receipts and issues of material "EXE" in a manufacturing unit, prepare the Store Ledger using Weighted Average Method of valuing the issues.

Nov. 1	**Opening stock 2,000 units @ ₹ 5.00 each**
Nov. 3.	**Issued 1,500 units to production**
Nov. 4.	**Received 4,500 units @ ₹ 6.00 each**
Nov. 8.	**Issued 1,600 units to production'**
Nov. 9.	**Returned to stores 100 units by Production Department (from the issues of Nov. 3)**
Nov. 16.	**Received 2,400 units @ ₹ 6.50 each**
Nov. 19.	**Returned to supplier 200 units out of the quantity received on Nov. 4**
Nov. 20.	**Received 1,000 units @ ₹ 7.00 each Issued**
Nov. 24.	**Issued to production 2,100 units**
Nov. 27.	**Received 1,200 units @ ₹ 7.50 each**
Nov. 29.	**Issued to production, 2,800 units. (Use rates up to two decimal places).**

Answer:

Stores Ledger (Weighted Average Method)

Date	Receipts			Issues			Stock		
	Qty.	Rate	Amount	Qty.	Rate	Amount	Qty.	Rate	Amount
Nov.		₹	₹		₹	₹		₹	₹

1							2,000	5.00	10,000
3				1,500	5.00	7,500	500	5.00	2,500
4	4,500	6.00	27,000				5,000	5.90	29,500
8				1,600	5.90	9,440	3,400	5.90	20,060
9	100	5.00	500				3,500	5.87	20,560
16	2,400	6.50	15,600				5,900	6.13	36,160
19				200	6.00*	1,200	5,700	6.13	34,960
20	1,000	7.00	7,000				6,700	6.26	41,960
24				2,100	6.26	13,146	4,600	6.26	28,814
27	1,200	7.50	9,000				5,800	6.52	37,814
29				2,800	6.52	18,256	3,000	6.52	19,558

***** Returned to supplier out of the quantity received on Nov. 4

Question.5

A factory has three production departments: The policy of the factory is to recover the production overheads of the entire factory by adopting a single blanket rate based on the percentage of total factory overheads to total factory wages. The relevant data for a month are given below:

Department	Direct Material (₹)	Direct Wages (₹)	Factory Overheads (₹)	Direct Labour Hour	Machine Hours
Budget					
Machining	**6,50,000**	**80,000**	**3,60,000**	**20,000**	**80,000**
Assembly	**1,70,000**	**3,50,000**	**1,40,000**	**1,00,000**	**10,000**
Packing	**1,00,000**	**70,000**	**1,25,000**	**50,000**	**-------**
Actual					
Machining	**7,80,000**	**96,000**	**3,90,000**	**24,000**	**96,000**
Assembly	**1,36,000**	**2,70,000**	**84,000**	**90,000**	**11,000**
Packing	**1,20,000**	**90,000**	**1,35,000**	**60,000**	

The details of one of the representative jobs produced during the month are as under:
Job No. 100

Department	Direct Material (₹)	Direct Wages (₹)	Direct Labour Hour	Machine Hours
Machining	**1,200**	**240**	**60**	**180**
Assembly	**600**	**360**	**120**	**30**
Packing	**300**	**60**	**40**	**–**

The factory adds 30% on the factory cost to cover administration and selling overheads and profit.

Required:

(i) Calculate the overhead absorption rate as per the current policy of the company and determine the selling price of the Job No. 100.

(ii) Suggest any suitable alternative method(s) of absorption of the factory overheads and calculate the overhead recovery rates based on the method(s) so recommended by you.

(iii) Determine the selling price of Job 100 based on the overhead application rates calculated in (ii) above.

(iv) Calculate the department wise and total under or over recovery of overheads based on the company's current policy and the method(s) recommended by you.

Answer

(i) Computation of overhead absorption rate
(As per the current policy of the company)

Department	Budgeted Factory Overheads (₹)	Budgeted Direct Wages (₹)
Machinery	3,60,000	80,000
Assembly	1,40,000	3,50,000
Packing	1,25,000	70,000
Total	6,25,000	5,00,000

$$\text{Overhead absorption rate} = \frac{\text{Budgeted factory overheads}}{\text{Budgeted direct wages}} \times 100$$

$$= \frac{₹\,6,25,000}{₹\,5,00,000} \times 100$$

= 125% of Direct wages

Selling price of the Job No. 100

	₹
Direct Materials	2,100.00
(₹ 1,200 + ₹ 600 + ₹ 300	
Direct Wages	660.00
(₹ 240 + ₹ 360 + ₹ 60)	
Overheads	825.00
(125% × ₹ 660)	
Total factory cost	3,585.00
Add: Mark-up	1,075.50
Selling price	4,660.50

(ii) Methods available for absorbing factory overheads and their overhead recovery rates in different departments.

1. Machining Department

In the Machining department, the use of machine time is the predominant factor of production. Hence machine hour rate should be used to recover overheads in this department. The overhead recovery rate based on machine hours has been calculated as under:

$$\text{Machine hour rate} = \frac{\text{Budgeted factory overheads}}{\text{Budgeted machine hours}}$$

$$= \frac{₹\,3,60,000}{80,000\,\text{hours}}$$

= ₹ 4.50 per hour

2. Assembly Department

In this department direct labour hours is the main factor of production. Hence direct labour hour rate method should be used to recover overheads in his department. The overheads recovery rate in this case is:

$$\text{Direct labour hour rate} = \frac{\text{Budgeted factory overheads}}{\text{Budgeted direct labour hours}}$$

$$= \frac{₹1,40,000}{1,00,000 \text{ hours}}$$

= ₹ 1.40 per hour

3. Packing Department

Labour is the most important factor of production in this department. Hence direct labour hour rate method should be used to recover overheads in this department.

The overhead recovery rate is in this case comes to:

$$\text{Direct labour hour rate} = \frac{\text{Budgeted factory overhead}}{\text{Direct labour hours}}$$

$$= \frac{₹ 1,25,000}{50,000 \text{ hours}}$$

= ₹ 2.50 per hour

(iii) Selling price of Job 100
[based on the overhead application rates calculated in (ii) above)

	₹
Direct materials	2,100.00
Direct wages	660.00
Overheads (Refer to Working Note)	1,078.00
Factory cost	3,838.00
Add: Mark up	1,151.40
(30% of ₹ 3,838)	
Selling Price	4,989.40

Working Note
Overhead Summary Statement

Dept.	Basis	Hours	Rate ₹	Overheads ₹
Machining	Machine hour	180	4.50	810
Assembly	Direct labour hour	120	1.40	168
Packing	Direct labour hour	40	2.50	100
			Total	1,078

(iv) Department-wise statement of total under or over recovery of overheads

(a) Under current policy

	Departments			
	Machining ₹	**Assembly ₹**	**Packing ₹**	**Total ₹**
Direct Wages (Actual)	96,000	2,70,000	90,000	
Overheads recovered @ 125% of Direct wages: (A)	1,20,000	3,37,500	1,12,500	5,70,000
Actual overheads: (B)	3,90,000	84,000	1,35,000	6,09,000
(Under)/Over recovery of overheads: (A – B)	(2,70,000)	2,53,500	(22,500)	(39,000)

(b) As per methods suggested Basis of overhead recovery

	Machine hours	Direct Labour hours	Direct labour hours	Total ₹
Hours worked	96,000	90,000	60,000	
Rate/hour (₹)	4.50	1.40	2.50	
Overhead recovered (₹): (A)	4,32,000	1,26,000	1,50,000	7,08,000
Actual overheads (₹): (B)	3,90,000	84,000	1,35,000	6,09,000
(Under)/Over recovery: (A – B)	42,000	42,000	15,000	99,000

Question.6

(a) The overhead expenses recorded in the books of a manufacturing Company for the year ended 30th June, 2013 are given below:

	Total ₹	Production Department		Service Department	
		Machine Shop ₹	Packing ₹	General Plant ₹	Maintenance and Stores ₹
Indirect labour	**29,300**	**8,000**	**6,000**	**4,000**	**11,300**
Maintenance Material	**10,040**	**3,600**	**1,400**	**2,040**	**3,000**
Miscellaneous supplies	**3,500**	**800**	**2,000**	**300**	**400**
Supervisor's Salary	**8,000**	**----**	**----**	**8,000**	**-----**
Cost and payroll salaries	**20,000**	**----**	**----**	**20,000**	**-----**
Power	**16,000**				
Rent	**24,000**				
Heat and Fuel	**12,000**				
Insurance	**2,000**				
Taxes	**4,000**				
Depreciation	**2,00,000**				
	3,28,840	**12,400**	**9,400**	**34,340**	**14,700**

The following data are also available:

	Floor space (sq.ft)	Radiator section	No. of employees	Value of assets (₹)	H.P. ×hours
Machine Shop	**1,000**	**90**	**40**	**64,000**	**3,500**
Packing	**400**	**180**	**20**	**20,000**	**500**
General Plant	**200**	**60**	**6**	**1,000**	**-----**
Maintenance and Stores	**800**	**120**	**10**	**15,000**	**1,000**
	2,400	**450**	**76**	**1,00,000**	**5,000**

Expenses charged to the Maintenance and Stores are to be distributed to other departments by the following percentages:
Machine Shop – 50%, Packing – 20%, General Plant – 30%
General Plant Overheads are to be distributed on the basis of number of employees.

Show the distribution of overheads to production and service departments and determine the amount of production departments, overhead after redistribution. Carry through 2 cycles.

Answer:

Distribution of Overeads for the Year Ended 30th June, 2013

Particulars	Basis of allocation	Production Depts.		Service Deots.		
		Machine Shop ₹	Packing ₹	General Plant ₹	Maintenance and Stores ₹	Total ₹
Indirect labour	Direct	8,000	6,000	4,000	11,300	29,300
Maintenance Materials	Direct	3,600	1,400	2,040	3,000	10,040
Misc. Supplies	Direct	800	2,000	300	400	3,500
Supervisor's Salaries	Direct	----	----	8,000	----	8,000
Cost and payroll salaries	Direct	----	----	20,000	----	20,000
		12,400	9,400	34,340	14,700	70,840
Power	H.P. × Hours (7:1:2)	11,200	1,600	------	3,200	16,000
Rent	Floor space (sq. ft)	10,000	4,000	2,000	8,000	24,000
Heat & Fuel	Radiator section	2,400	4,800	1,600	3,200	12,000
Insurances	Value of assets	1,280	400	20	300	2,000
Taxes	Value of assets	2,560	800	40	600	4,000
Depreciation	Value of assets	1,28,000	40,000	2,000	30,000	2,00,000
Total		1,67,840	61,000	40,000	60,000	3,28,840
Maintenance and Stores	Percentages	30,000	12,000	18,000	(-)60,000	
General Plant	No. of employees	33,143	16,571	(-)58,000	8,268	
Maintenance etc.	Percentages	4,143	1,657	2,486	(-)8,286	
General Plant	No. of employees	1,657	829	(-)2,486	-----	
Total		2,36,783	92,057			

(b) Meera Industries Limited is a single product organization having a manufacturing capacity of 6,000 units per week of 48 hours The output data vis-à-vis different elements of cost for three consecutive weeks are given below:

Units Produced	Direct Material	Direct Labour	Total Factory Overheads (Variable & Fixed)
2,400	**₹ 4,800**	**₹ 6,000**	**₹ 37,200**

2,800	**5,600**	**7,000**	**38,400**
3,600	**7,200**	**9,000**	**40,800**

As a Cost Accountant, you are asked by the Company Management to work out the selling price assuming an activity level of 4,000 units per week and a profit of 20% on selling price.

Answer:

Variable Overheads Per unit = Change in expenses /Change in output
= (38,400 – 37,200 /2,800 – 2,400)
= ₹ 3.00

This result can also be verified from the figures given for third week.

Calculation of Fixed Overheads:

Total Factory Overheads for 2,400 units	₹ 37,200
Less: Total Variable Overheads for 2,400 units (2,400 units × ₹ 3.00)	7,200
Total Fixed Overheads for the Company	30,000

This result can also be verified from the figures of next two weeks.

Statement Showing Cost of 4,000 units

Direct Material	4,000 units × ₹ 4,800 /2,400	8,000
Direct Labour:	4,000 units × ₹ 6,000 /2,400	10,000
Variable Overheads:	4,000 units × ₹ 3.00	12,000
Fixed Overheads:		30,000
Total Cost		60,000

Profit for 4,000 units:
Profit required is 20% on selling price or 25% of cost
Cost will be = (100-20) = ₹ 80.
Profit desired will amount to ₹ 60,000 × 25/100 = ₹ 15,000
This selling price for 4,000 units can be ascertained as under:

Cost of 4,000 units	₹ 60,000
Profit	₹ 15,000
Total Sales	₹ 75,000

Selling price per unit = 75,000 ÷ 4,000 = ₹ 18.75

Question.7

(a) Two fitters, a labourer and a boy undertake a job on piece rate for ₹ 1,290. The time spent by each of them is ₹ 220 ordinary working hours. The rates of pay on time-rate basis, are ₹ 1.50 per hour for each of the two fitters, Re 1 per hour for the labourer and Re 0.50 per hour for the boy. Calculate:

(i) The amount of piece-work premium and the share of each worker, when the piece-work premium is divided proportionately to the time wages paid

(ii) The selling price of the above job on the basis of the following additional data:
Cost of direct material ₹ 2,010; Works Overhead at 20% of Prime Cost, Selling Overhead at 10% of Work Cost and Profit at 25% on Cost of Sales.

Answer:

(i) Calculation of wages:

2 Fitters @ ₹ 1.50 per hour for 220 hours each	₹ 660

1 Labourers @ Re. 1 per hour for 220 hours	₹ 220
1 Boy @ Re. 0.50 per hour for 220 hours	₹ 110
Total	₹ 990

Piece Work Premium

Total Wages agreed on piece-rate basis	1,290
Less: Wages calculated on time basis	990
Piece Work Premium [as in (i) above]	300

Amount of premium will be paid to workers in the ratio of 660:220:110 (or 6:2:1) as follows:

	₹
2 Fitters	200.00
1 Labourer	66.67
1 Boy	33.33
	300.00

(ii) Computation of Selling Price:

Direct Material	₹ 2,010
Direct Wages	1,290
Prime Cost	3,300
Work Overheads at 20% in Prime Cost	660
Work Cost	3,960
Selling Expenses at 10% in Work Cost	396
Cost of Sales	4,356
Add: Profit at 25% on Cost of Sales	1,089
Selling Price	5,445

(b) A publishing house purchases 2,000 units of a particular item per year at a unit cost of ₹ 20, the ordering cost per order is ₹ 50 and the inventory carrying cost is 25%. Find the optimal order quantity and the minimum total cost including purchase cost.
If a 3% discount is offered by the supplier for purchases is lots of 1,000 or more, should the publishing house accept the order?

Answer:

EOQ without discount

$$= \sqrt{\frac{2ab}{CS}} = \sqrt{\frac{2 \times 2{,}000 \text{units} \times ₹50}{₹20 \times 25\%}} = 200 \text{ units}$$

No. of orders to be placed = 2,000 ÷ 200 = 10 orders
Average inventory (200 ÷ 2) = 100 unit

Ordering cost (10 x ₹50)	₹500
Carrying Cost of average inventory (100 x 5)	500
Purchase Cost (2,000 x ₹20)	40,000
	41,000

EOQ with discount
Unit Cost after discount = ₹ 20 - (3% of 20) = ₹ 19.40
Carrying Cost = 25% of ₹ 19.40 = ₹ 4.85
Lot size = 1,000 units, i.e., 2 orde₹
Average inventory (1,000 ÷ 2) = 500 units

	₹
Ordering cost (2 x ₹50)	100
Carrying Cost of average inventory (500 x ₹4.85)	2,425
Purchase Cost (2,000 x ₹19.40)	38,800
	41,325

The above computation shows that supplier's offer for 3% discount should not be accepted. However, higher discount should be negotiated with the supplier.

Question.8

(a) The Purchase Department of your organisation has received an offer of quantity discounts on its orders of materials as under:

Price per tonne (₹)	Tonnes
1,200	**Less than 500**
1,180	**500 and less than 1,000**
1,160	**1,000 and less than 2,000**
1,140	**2,000 and less than 3,000**
1,120	**3,000 and above**

The annual requirement for the material is 5,000 tonnes. The delivery cost per order is ₹ 1,200 and the stock holding cost is estimated at 20% of material cost per annum.

You are required to advise the Purchase Department the most economical purchase level.

(b) From the following data for the year ended 31st December, 2013, calculate the inventory turnover ratio of the two items and put forward your comments on them,

	Material A	Material B
Opening stock 1/1/2013	**₹ 10,000**	**₹ 9,000**
Purchase during the year	**52,000**	**27,000**
Closing stock 31/12/2013	**6,000**	**11,000**

Answer:

(a) Statement showing the most economic purchase level

1.	Order Size (tone)	400	500	1,000	2,000	3,000
2.	No. of orders (annual requirement ÷ order size)	12.5	10	5	2.5	1.67
3.	Value of order Order size × price per tonne) (₹'000)	480	590	1,160	2,280	3,360
4.	Average inventory (Value per order ÷ 2) (₹'000)	240	295	580	1,140	1,680
5.	Ordering Cost (No. of cost x ordering cost per order) (₹1,200)	15,000	12,000	6,000	3,000	2,000
	Carrying cost (20% of item 4)	48,000	59,000	1,16,000	2,28,000	3,36,000
	Total of 5	63,000	71,000	1,22,000	2,31,000	3,38,000
	Add: Annual cost of material (Annual demand ÷ Price per tonne)	60,00,000	59,00,000	58,00,000	57,00,000	56,00,000
	Total annual cost	60,63,000	59,71,000	59,22,000	59,31,000	59,38,000

₹ 59,22,000 is the total minimum cost at 1,000 order size.

Therefore, the most economical purchase level is 1,000 tonne

(b) First of all it is necessary to find out the cost of material consumed

Cost of Material consumed	Materials A	Materials B
Opening stock	₹10,000	₹9,000
Add: Purchases	52,000	27,000
	62,000	36,000
Less: Closing Stock	6,000	11,000
Materials consumed	56,000	25,000
Average inventory : (Op. Stock + Cl. Stock) ÷ 2	8,000	10,000
Inventory Turnover ratio : (Consumption ÷ Avg. inventory)	7 times	2.5 times
Inventory Turnover (No. of days) : (No. of days in a year ÷ I. T. Ratio)	52 days	146 days

Comments: Material A is more fast moving than Material B.

(c) List out the advantages of Cost control.

Answer:

Advantages of Cost Control

The advantages of cost control are mainly as follows

(i) Achieving the expected return on capital employed by maximising or optimizing profit
(ii) Increase in productivity of the available resources
(iii) Reasonable price of the customers
(iv) Continued employment and job opportunity for the workers
(v) Economic use of limited resources of production
(vi) Increased credit worthiness
(vii) Prosperity and economic stability of the industry

Question.9

(a) What do you mean by time and motions study? Why is it so important to management?

Answer:

Time and motions study: It is the study of time taken and motions (movements) performed by workers while performing their jobs at the place of their work. Time and motion study has played a significant role in controlling and reducing labour cost.
Time Study is concerned with the determination of standard time required by a person of average ability to perform a job. Motion study, on the other hand, is concerned with determining the proper method of performing a job so that there are no wasteful movements, hiring the worker unnecessarily. However, both the studies are conducted simultaneously. Since materials, tools, equipment and general arrangement of work, all have vital bearing on the method and time required for its completion. Therefore, their study would be incomplete and would not yield its full benefit without a proper consideration of these factors.

Time and motion study is important to management because of the following features:

(i) Improved methods, layout, and design of work ensures effective use of men, material and resources.
(ii) Unnecessary and wasteful methods are pin-pointed with a view to either improving them or eliminating them altogether. This leads to reduction in the work content of an operation, economy in human efforts and reduction of fatigue.
(iii) Highest possible level of efficiency is achieved in all respect.

(iv) Provides information for setting labour standards - a step towards labour cost control and cost reduction.

(v) Useful for fixing wage rates and introducing effective incentive scheme.

(b) Fair Play Co. Ltd has introduced a Scanlon Plan of incentive bonus for its employees in 2013 based on the following information relating to previous three years:

Year	Sales Revenue ₹	Total Salaries & Wages ₹
2010	**1,25,000**	**45,000**
2011	**1,30,000**	**28,000**
2012	**1,35,000**	**32,000**

For 2013 the sales revenue has been ₹ 1,50,000 and total salaries and wages payment has been ₹ 36,000. What is the amount due as bonus to the employees according to Scanlon Plan?

If 30% is set aside in a bonus equalisation fund how much money is available to be paid out as Scanlon bonus for 2013?

Answer:

Average of Sales Revenue = (1,25,000 + 1,30,000 + 1,35,000) ÷ 3 = ₹1,30,000
Average salary = (45,000 + 28,000 + 32,000) ÷ 3 = ₹ 35,000
% of average salary & wages on average sales = 35,000 / 1,30,000 = 26.92%

The share of employees in 2013 = 1,50,000 x 26.92 / 100	= ₹ 40,380
(-) Paid as wages	= ₹ 36,000
	= ₹ 4,380
(-) Transfer to bonus equalization fund (30%)	= ₹ 1,314
Amount still to be paid as bonus	= ₹ 3,066

Question.10

(a) From the records of an oil distributing company, the following summarized information is available for the month of March 2013:

Sales for the month: ₹19,25,000
Opening Stock as on 01-03-2013: 1,25,000 litres @ ₹6.50/litre.
Purchases (including freight and insurance):
March 5: 1,50,000 litres @ ₹7.10/litre
March 27: 1,00,000 litres @ ₹7.00/litre
Closing stock as on 31-3-13: 1,30,000 litres
General Administration expenses for the month: ₹45,000

On the basis of the above information, work out the following using FIFO and LIFO methods of inventory valuation assuming pricing of issues is being done at the end of the month after all receipts during the month :

(i) Value of closing stock as on 31- 03-2013
(ii) Cost of goods sold during March 2013
(iii) Profit or loss for March 2013

Answer:

(i) Valuation of closing stock as on 31-3-2013

(i) **FIFO Method**, (the closing stock will comprise the items purchased in the end)

1,00,000	Litres purchased on 27-3-13 @ ₹7.00	₹7,00,000
30,000	Litres from purchase made on 05-03-13 @ ₹7.10	2,13,000
1,30,000	Value of closing stock under FIFO method	9,13,000

(ii) **LIFO Method**: (The closing stock will comprise the item lying opening stock and purchased in the beginning)

1,25,000	Litres purchased on 27-03-13 @ ₹6.50	₹8,12,500
5,000	Litres from purchase made on 05-03-13 @ ₹7.10	35,500
1,30,000	Value of closing stock under FIFO method	8,48,000

(ii) Cost of Goods Sold

	FIFO Method	LIFO Method
Opening stock as on 1-3-2013	₹8,12,500	₹8,12,500
Purchases made on 5th March	10,65,000	10,65,000
Purchases made on 27th March	7,00,000	7,00,000
Total	25,77,500	25,77,500
Less Closing stock as per (a)	9,13,000	8,48,000
Cost of material consumed	16,64,500	17,29,500
Add general Administration Expenses	45,000	45,000
Cost of goods sold	17,09,500	17,74,500

(iii) Profits

	FIFO Method	LIFO Method
Cost of goods sold	₹17,09,500	₹17,74,500
Sales	19,25,000	19,25,000
Profit	2,15,500	1,50,500

(b) Discuss how payment of wages will it be dealt with casual workers and workers employed on outdoor works in Cost Accounts.

Answer:

Casual and Outdoor Workers

Casual Workers are employed temporarily, for a short duration to cope with sporadic increase in volume of worker. If the permanent labour force is not sufficient to cope effectively with a rush of work, additional labour (casual workers) are employed to work for a short duration. Outdoor workers are those workers who do not carry out their work in the factory premises. Such workers either carry out the assigned work in their homes or at a site outside the factory.

Casual workers are engaged on a daily basis. Wages are paid to them either at the end of the day's work or after a periodic interval. Wages paid are charged as charged as direct or indirect labour cost depending on their identifiability with specific jobs, work orders, or department.

Rigid control should be exercised over the out-workers especially with regard as follows:

(i) Reconciliation of materials drawn/ issued from the store with the output.

(ii) Ensuring the completion of output during the stipulated time so as to meet comfortably the orders and contracts.

Question.11

(a) How costs can be classified based on function?

Answer:

Based on the functions, the cost can be classified into:

(i) Production Cost – The production cost is inclusive of all direct material, direct labour, direct expenses and manufacturing expenses. It refers to costs concerned with manufacturing activity which starts with supply of material and ends with primary packing of the product.

(ii) Administration Cost – The Administration cost in incurred for carrying the administrative function of the organization i.e. cost of policy formulation and its implementation to attain the objectives of the organization.

(iii) Selling and Distribution Cost – The Selling cost refers to the cost of selling function i.e. the cost of activities relating to create and stimulate demand for company's products and to secure orders. The Distribution costs will be incurred on goods made available to the customers. These costs include the cost of maintaining and creating demand of product, making the goods available in the hands of customer.

(iv) Research and Development Cost – The Research cost is the cost of searching for new products, new manufacturing process, improvement of existing products, processes or equipment and the Development cost is the cost of putting research result on commercial basis.

(b) State the method of Costing suitable for the following industries. Also mention the cost unit for each.

(i) Textile Mills
(ii) Electricity Undertakings
(iii) Automobile repair workshops
(iv) Brick making
(v) Cement manufacture
(vi) Passenger Bus Service

Answer:

The method of Costing and Cost Units applicable against each of the industries are given below:

Industry	Method of Costing	Cost Unit
Textile Mills	Process Costing	Kg of yarn for Spinning Metre of cloth for Weaving
Electricity Undertakings	Operating Costing	KWH.
Automobile repair workshops	Job Costing	Vehicle
Brick making	Single Output Costing	1000 bricks
Cement Manufacturing	Process Costing	Tonne
Passenger Bus Service	Operating Costing	Passenger Kilometre

Question.12

(a) Write down the objective and functions of Cost Accounting Standard Board?

Answer:

Objectives and Functions of the Cost Accounting Standards Board:

The objectives of the CASB are to develop high quality Cost Accounting Standards to enable the management to take informed decisions and to enable regulators to function more effectively by integrating, harmonizing and standardizing Cost Accounting Principles and Practices.

The following will be the functions of the CASB:-

(i) To issue the framework for the Cost Accounting Standards.

(ii) To equip the Cost & Management Accounting professionals with better guide lines on cost Accounting Principles.

(iii) To assists the members in preparation of uniform cost statements under various statutes.

(iv) To provide from time to time interpretations on Cost Accounting Standards.

(v) To issue application guidance relating to particular standard.

(vi) To propagate the Cost Accounting Standards and to persuade the users to adopt them in the preparation and presentation of general purpose Cost Statement.

(vii) To persuade the government and appropriate authorities to enforce Cost Accounting Standards, to facilitate the adoption thereof, by industry and corporate entities in order to achieve the desired objectives of standardization of Cost Accounting Practices.

(viii) To educate the users about the utility and the need for compliance of Cost Accounting Standards.

(b) Valuation of Receipt of Material (special treatment related to exchange rate difference)
Purchase of Materials $ 60,000 [Forward contract rate $ = 58.40 but $ = 60.60 on the date of importation]; Import Duty paid ₹ 5,65,000; Freight inward ₹ 1,62,000 ; Insurance paid for import by road ₹ 48,000; Cash discount ₹ 33,000; CENVAT Credit refundable ₹ 37,000; Payment made to the foreign vendor after a month, on that date the rate of exchange was $ = 65,20. Compute the landed cost of material.

Answer:

Computation of Landed Cost of Material

	Particulars	**Amount (₹)**
	Purchase price of Material [60,000 x 60.60]	36,36,000
Add	Import Duties of purchasing the material	5,65,000
Add	Freight Inward during the procurement of material	1,62,000
Add	Insurance of the material (In case of import of material by Road / Sea)	48,000
	Total	**44,11,000**
Less	CENVAT Credit refundable	37,000
	Value of Receipt of Material	**43,74,000**

Note:

(i) Excess payment made to the vendor due to exchange fluctuation is not an includible cost, hence not considered.

(ii) Though the forward contract rate was $ = 58.40, but the exchange rate on the date of importation is considered. Hence, included in the cost of materials. Accordingly, the purchase cost is computed considering the $ = 60.60.

Question.13

(a) Explain the scope of Cost Accountancy.

Answer:

Scope of Cost Accountancy

The scope of Cost Accountancy is very wide and includes the following:-

(i) Cost Ascertainment: The main objective of Cost Accounting is to find out the Cost of product / services rendered with reasonable degree of accuracy.

(ii) Cost Accounting: It is the process of Accounting for Cost which begins with recording of expenditure and ends with preparation of statistical data.

(iii) Cost Control: It is the process of regulating the action so as to keep the element of cost within the set parameters.

(iv) Cost Reports: This is the ultimate function of Cost Accounting. These reports are primarily prepared for use by the management at different levels. Cost reports helps in planning and control, performance appraisal and managerial decision making.

(v) Cost Audit: Cost Audit is the verification of correctness of Cost Accounts and check on the adherence to the Cost Accounting plan. Its purpose is not only to ensure the arithmetic accuracy of cost records but also to see the principles and rules have been applied correctly.

To appreciate fully the objectives and scope of Cost Accounting, it would be useful to examine the position of Cost Accounting in the broader field of general accounting and other sciences. i.e Financial Accounting , Management Accounting, Engineering and Service Industry.

(b) Gross pay ₹12,80,000 (including cost of idle time hours paid to employee ₹85,000); Accommodation provided to employee free of cost [this accommodation is owned by employer, depreciation of accommodation ₹2,00,000, maintenance charges of the accommodation ₹1,00,000, municipal tax paid for this accommodation ₹5,000], Employer's Contribution to P.F. ₹1,00,000 (including a penalty of ₹2,000 for violation of PF rules), Employee's Contribution to P.F. ₹75,000. Compute the Employee cost.

Answer:

Computation of Employee Cost

	Particulars	**Amount(₹)**
	Gross Pay (net of cost of idle time) =[12,80,000 (-) 85,000]	11,95,000
Add	Cost of accommodation provided by employer = Depreciation (+) Municipal Tax paid (+) maintenance charges = 2,00,000 + 5,000 + 1,00,000 = 1,93,000	3,05,000
Add	Employer's Contribution to PF excluding penalty paid to PF authorities [= 1,00,000 (-) 2,000]	98,000
	Employee Cost	**15,98,000**

Note:

(i) Assumed that the entire accommodation is exclusively used by the employee. Hence, cost of accommodation provided includes all related expenses/costs, since these are identifiable /traceable to the cost centre.

(ii) Cost of idle time hours is an excludible item. Since it is already included in the gross pay, hence excluded.

(iii) Penalty paid to PF authorities is not a normal cost. Since, it is included in the amount of contribution, it is excluded.

Question.14

(a) What are the general principles of measurement of Direct Expenses as per CAS-10

Answer:

General principles of measurement of Direct Expenses as per CAS-10:

(i) Identification of direct expenses shall be based on traceability in an economically feasible manner.

(ii) Direct expenses incurred for bought out resources shall be determined at invoice price including all taxes and duties and any other expenditure directly attributable there to net of trade discounts, taxes and duties refundable or to be credited.

(iii) Direct expenses incurred in lump-sum shall be amortized on the basis of estimated output or benefit to be derived from such expenses.

(iv) Finance cost incurred in connection with self generated or procured resources shall not form part of the direct expenses.

(v) Any subsidy or grant or incentive or any amount received or receivable with respect to any direct expenses shall be reduced for ascertainment of the cost of the cost object.

(vi) Penalties / damages paid to statutory authorities shall not be form part of the direct expenses.

(vii) Any change in the cost accounting principles applied for measurement of the direct expenses should be made only if it is required by law or for compliance with the requirements of a Cost Accounting Standard or a change would result in a more appropriate preparation or presentation of Cost Statement of the organization.

(b) A manufacturing unit produces two products A and B. The following information is furnished:

Particulars	Product A	Product B
Units produced (Qty)	**30,000**	**25,000**
Units Sold (Qty)	**20,000**	**22,000**
Machine Hours utilised	**10,000**	**5,000**
Design charges	**17,000**	**20,000**
Software development charges	**24,000**	**36,000**

Royalty paid on sales ₹54,000 [@ ₹2 per unit sold, for both the products]; Royalty paid on units produced ₹35,000 [@ Re.1 per unit purchased, for both the products], Hire charges of equipment used in manufacturing process of Product A only ₹10,000, Compute the Direct Expenses.

Answer:

Computation of Direct Expenses

	Particulars	Product A	Product B
	Royalty paid on Sales	40,000	44,000
Add	Royalty paid on units produced	30,000	25,000
Add	Hire charges of equipment used in manufacturing process of Product A only	10,000	----
Add	Design Charges	17,000	20,000
Add	Software development charges related to production	24,000	36,000
	Direct Expenses	**1,21,000**	**1,25,000**

Note:

(i) Royalty on production and royalty on sales are allocated on the basis of units produced and units sold respectively. These are directly identifiable and traceable to the number of units produced and units sold. Hence, this is not an apportionment.

(ii) No adjustments are made related to units held, i.e. closing stock.

Question.15

(a) State the circumstances in which time rate system of wage payment can be preferred in a factory. What are the advantages of this system?

Answer:

In time based wage payment plans, standard time is predetermined and the efficiency of each individual worker is assessed to compensate them for higher efficiency in work as compared to standard time set. These plans can be suitably applied in the following circumstances:

(i) Where the output of an individual worker cannot be measured reasonably.
(ii) Where the work is required to be closely supervised.
(iii) Where the quality of work is more important.
(iv) Where output of an individual worker is not in his control.
(v) Where increase in output is negligible compares to the incentive.

The advantages of time rate remuneration plans are as follows:

(i) It is commonly recognized by all trade unions as well as worker
(ii) It is a guaranteed income assured to the worker
(iii) It is very easy to understand and simple to calculate the earnings of worker
(iv) It involves less clerical work and detailed records are not necessary.
(v) Since the production is not the criteria for calculation of wages, tools and materials are handled carefully. Wastage is also minimized.

(b) How do you deal with the following in Cost Accounts?

(i) Data processing cost.
(ii) Spoiled Work

Answer:

The treatment will be as follows:

(i) Data Processing Control: In the environment of processing information with the help of computers, the data processing cost represents the cost incurred for processing data relating to accounts, secretarial, personnel, finance, marketing, sales etc. This may be done either utilizing in house facilities or hiring outside facilities. The cost incurred is accumulated for separate service centre if in-house facilities are made available. Where the costs of data processing centre or hiring charges are identifiable to a particular department or activity it should be charged with its portion of cost. In case of common costs incurred for service of all departments, the data processing cost should be apportioned to different departments on equitable basis.

(ii) Spoiled Work: The loss by spoilage may be inherent to the nature of the product or it may be caused by normal circumstances. If it is of an inherent nature and cannot be avoided, it would be charged either to the specific job in which it is accrued or should be recovered as overhead charge from the entire production, where there is no specific job or work order. In case it has been caused by abnormal circumstances, it should be charged to the Costing Profit and Loss Account. While accounting for loss by spoilage, any proceeds of the scrap should be accounted for either as a deduction from spoilage or by crediting it to the account which has been debited with the spoilage.

(c) Distinction between Allocation & Apportionment.

Answer:

Distinction between Allocation & Apportionment

Although the purpose of both allocation and apportionment is identical, i.e to identify or allot the costs to the cost centres or cost unit, both are not the same.
Allocation deals with the whole items of cost and apportionment deals with proportion of items of cost.
Allocation is direct process of departmentalization of overheads, where as apportionment needs a suitable basis for sub-division of the cost.
Whether a particular item of expense can be allocated or apportioned does not depends on the nature of expense, but depends on the relation with the cost centre or cost unit to which it is to be charged.

Question.16

(a) What are the implications of Economic Order Quantity in proper inventory management?

Answer:

The prime objective of inventory management is to find out and maintain optimum level of investment in inventory to minimize the total costs associated with it. Economic Order Quantity is the size of the order for which both ordering and carrying cost are minimum. Economic Order Quantity forms the very basis of inventory management. It refers to the size of each purchase order quantity for each item, which gives the maximum economy in purchase of that raw material or finished goods or stores materials. While placing any order for purchase of any item, it must be ensured that the order quantity is neither too large nor too small. A large order, no doubt, shall also mean the lower ordering cost but it shall mean a higher and sometimes prohibitive carrying costs. On the other hand, a small order may reduce the inventory carrying cost but the ordering costs would increase as the company may have to place a new order every now and then, besides, it may result in occasional production halts also. Therefore, a proper balance has to be struck between these two factors and the Economic Order Quantity shall be fixed at a point, where the aggregate cost of the two is minimum i.e., the total cost associated with the inventory management is minimum.

(b) What is the role of a Management Accountant in cost control and cost reduction?

Answer:

Management Accountants role in cost control and cost reduction is perhaps central to his role as a member of the management team. Indeed, for effective cost control, it may be necessary to spend more on the items which will reduce waste and scrap, improve quality, increase productivity or conserve energy. In any large organization the points at which costs are incurred are usually numerous and relatively few line managers have the mechanism of collating and analyzing all the costs they incur, with a view to implementing cost control measures. The Management Accountant is uniquely placed in this respect and it usually falls on him to play a catalytic role in getting the management team to work together to achieve specific cost control objectives.
It is also up to the Management Accountant to channelize the cost control and cost reduction efforts into areas which will give the greater results. Without this direction, cost control and cost reduction can too often degenerate into symbolic actions like reusing envelopes or downgrading the class of air travel, which generally have little impact on the overall cost structure but can substantially harm morale and motivation. it is important for the Management Accountant to guide the company's cost control and cost reduction programme into productive lines and not let it degenerate into a morale damaging axing of petty expenditure.

Question.17

(a) What is an idle capacity? What are the costs associated with it? How are these treated in product costs?

Answer:

Idle Capacity: Idle capacity is that part of the capacity of a plant, machine or equipment which cannot be effectively utilised in production. In other words, it is the difference between the practical or normal capacity and capacity of utilisation based on expected sales. For example, if the practical capacity of production of a machine is to the tune of 10,000 units in a month, but is used only to produce 8,000 units, because of market demand of the product, and then in such a case, 2,000 units will be treated as the idle capacity of the machine.

The idle capacity may arise due to lack of product demand, non-availability of raw-material, shortage of skilled labour, absenteeism, shortage of power, fuel or supplies, seasonal nature of product, etc

Idle Capacity Costs: Costs associated with idle capacity are mostly fixed in nature. These include depreciation, repairs and maintenance charges, insurance premium, rent, rates, management and supervisory costs. These costs remain unabsorbed or unrecovered due to under-utilisation of plant and service capacity. Idle capacity cost can be calculated as follows:-

$$\text{Idle capacity cost} = \frac{\text{Aggregate overhead related to plant}}{\text{Normal plant capacity}} \times \text{Idle Capacity}$$

Treatment of Idle capacity cost: Idle capacity costs can be treated in product costing, in the following ways:

(i) If the idle capacity cost is due to unavoidable reasons such as repairs, maintenance, changeover of job, etc, a supplementary overhead rate may be used to recover the idle capacity cost. In this case, the costs are charged to the production capacity utilized.

(ii) If the idle capacity cost is due to avoidable reasons such as faulty planning, power failure etc., the cost should be charged to profit and loss account.

(iii) If the idle capacity cost is due to seasonal factors, then, the cost should be charged to the cost of production by inflating overhead rates.

(b) Sunshine Ltd. buy and sell finished goods after carrying out some operations. They began the year with 3,000 units valued at ₹ 3 per unit. During the year they sold 25,000 units for an average sale price of ₹ 10 per unit. Purchases were as follows :

4,000 units @ ₹ 5 per unit

16,000 units @ ₹ 6 per unit

6,000 units @ ₹ 7 per unit

The current replacement cost of the unit is ₹ 8 and the Company's Taxation Manager advises that there may be significant tax advantages of purchasing at year-end at this price, as the company uses the LIFO method and has got the acceptance of the tax authorities for consistently using this method in its assessments. The corporate tax averages 30%.

Bearing in mind that the warehouse space is limited to 10,000 units, work out the tax advantages and the cost of year-end purchasing under this situation given that the operating expenses for the year are ₹ 37,000.

Answer:

Statement showing closing stock at the year end

Total purchases during the year	26,000 units
Opening stock	3,000

	29,000
Less: Units sold during the year	25,000
Total closing stock	4,000

Storage capacity is 10,000 units, year-end purchases can be up to 6,000.

Profit statement without making year-end purchases

(LIFO Method)

Sales (25,000 x 10)	₹ 2,50,000	
Less: Cost of goods sold		
6,000 x 7 = ₹ 42,000		
16,000 x 6 = ₹ 96,000		
3,000 x 5 = ₹ 15,000	1,53,000	
Gross profit	97,000	
Less: Operating expenses (given)	37,000	
Taxable income		60,000
Less: Income Tax @ 30%	18,000	
Profit after tax	42,000	

Profit statement after year-end purchases of 6,000 units at current replacement cost

Sales (25,000 x 10)	2,50,000	
Less: Cost of goods		
6,000 x 8 = 48,000		
6,000 x 7 = 42,000		
13,000 x 6 = 78,000	1,68000	
Gross profit	82,000	
Less: Operating expenses	37,000	
Taxable income		45,000
Less: income tax @ 30%	13,500	
Profit after tax	31,500	

Tax advantage: By accepting the advice of Taxation Manager of Sunshine Ltd. will be able to effect a tax saving of ₹ 4,500 i.e. ₹ 18,000 – ₹ 13,500 = ₹ 4,500.

Cost of year-end purchases: 6,000 units @ ₹ 8 =	48,000
Less: Tax advantage	4,500
Effective cost of closing inventory	43,500

Effective cost per unit of year-end purchase ₹ 43,500 ÷ 6,000 = ₹ 7.25.

Question.18

(a) Super class Co. Ltd. Has three production department X, Y and Z and two service department A and B.

The following estimated figures for a certain period have been made available:

Rent, Rates and Taxes	**₹ 10,000**
Lighting and electricity	**1,200**
Idirect Wages	**3,000**
Power	**3,000**
Depreciation of Machinery	**20,000**
Other expenses and sundries	**20,000**

Following are further details which are also available:-

	Total	X	Y	Z	A	B
Floor Space (Sq. mts.)	**10,000**	**2,000**	**2,500**	**3,000**	**2,000**	**500**
Light Point (Nos.)	**120**	**20**	**30**	**40**	**20**	**10**
Direct Wages ₹	**20,000**	**6,000**	**4,000**	**6,000**	**3,000**	**1,000**
Horsepower of machines	**300**	**120**	**60**	**100**	**20**	**----**
Cost Of Machinery (₹)	**1,00,000**	**24,000**	**32,000**	**40,000**	**2,000**	**2,000**
Working hours		**4,670**	**3,020**	**3,050**	**-----**	**-----**

The expenses of the service departments A and B are to be allocated as follows:

	X	Y	Z	A	B
A	**20%**	**30%**	**40%**	**----**	**10%**
B	**40%**	**20%**	**30%**	**10%**	**-----**

You are required to calculate the overhead absorption rate per hour in respect of the three production departments.
What will be the total cost of an article with material cost of ₹80 and direct labour cost of ₹ 40 which passes through x, Y and Z for 2,3 and 4 hours respectively?

Answer:

Departmental Primary Distribution Summary

Items	Basis of Apportionment	Total	Production Dept.			Service Dept.	
			X	Y	Z	A	B
Rent, Rates and Taxe	Floor Area	₹10,000	2,000	2,500	3,000	2,000	500
Lighting and Electricity	Light Point	1,200	200	300	400	200	100
Indirect Wages	Direct Wages	3,000	900	600	900	450	150
Power	Horse Power	3,000	1,200	600	1,000	200	-----
Depreciation of Machinery	Cost of Machine	20,000	4,800	6,400	8,000	400	4000
Other expenses and Sundries	Direct Wages	20,000	6,000	4,000	6,000	3,000	1,000
Direct Wages	Only Service Dept.	4,000	------	-----	-----	3,000	1,000
		61,200	15,100	14,400	19,300	9,250	3,150

Secondary Distribution

	X	Y	Z	A	B
A	1,850	2,775	3,700	(9,250)	925
B	1,630	815	1,222	408	(4,075)
A	82,	122	163	(408)	41
B	16	8	13	4	(41)
A	2	------	2	(4)	--------
Sub-total	3,580	3,720	5,100		
Grand total (₹)	18,680	18,120	24,400		
Working Hours	4,670	3,020	3,050		
Rate per hour (₹)	4	6	8		

Statement of Cost per Unit

Materia Cost	₹80	
Labour	₹40	₹120
Overhead		
X= 2 × 4	8	
Y= 3 × 6	18	
Z= 4 × 8	32	58
Total Productive Cost		178

(b) A machine shop has 8 identical Drilling Machines manned by 6 operators. The machines cannot be worked without an operator wholly engaged on it. The original cost of all these 8 machines works out to ₹ 8 lakhs. These particulars are furnished for a six month period:

Normal available hours per month	**208**
Absenteeism (without pay) – hours	**18**
Leave (with pay) – hours	**20**
Normal idle time unavoidable – hours	**10**
Average rate of wages per day of 8 hours	**₹ 20**
Production Bonus estimated	**15% on wages**
Value of Power consumed	**₹ 8,050**
Supervision and Indirect Labour	**₹ 3,300**
Lighting and Electricity	**₹ 1,200**

These particulars are for a year:
Repairs and maintenance including consumables 3% on value of machines.
Insurance ₹ 40,000.
Depreciation 10% on original cost.
Other sundry works expenses ₹ 12,000
General Management expenses allocated ₹ 54,530.
Your are required to work out a comprehensive machine hour rate for the Machine Shop.

Answer:

Before computing the comprehensive machine hour rare, it is necessary to find out the total machine hours utilized and total wages paid to the operators.

Computation of total machine hours utilized

Normal available hours p.m. per operator		208 hours
Less: Unutilised hours due to:		
Absenteeism	18 hours	
Leave	20	
Idle time	10	48
Total hours utilized p.m. per operator		160

It is given in the question that the machines cannot work without an operator wholly engaged on it.
Therefore, hours utilized for 6 operators, i.e., 5,760 hrs. represents the total machine hours.
Total wages to 6 operators for 6 months
Average rate of wages per hour = ₹ 20 ÷ 8 hrs. = ₹ 2.50.
Normal hours for which wages are to be paid = 208 – 18 or 190 hrs.
Wages for 6 months for 6 operators @ ₹ 2.50/hr. = 190 x 6 x 6 x 2.50 or ₹ 17,100.

Computation of Comprehensive Machine hour rate for the Machine Shop

Particulars	₹
Operators wages (as above)	17,100
Production Bonus (15% of wages)	2,565
Power consumed	8,050

Supervision and indirect labour	3,300
Lighting and electricity	1,200
Repairs and maintenance (3% of ₹ 8 lakhs) ÷ 2	12,000
Insurance (given for 12 months; reduced to 50% for 6 months)	20,000
Depreciation for 6 months	40,000
Other sundry works expenses for 6 months	6,000
General management expenses for 6 months	27,265
Total overheads for 6 months	1,37,480

Comprehensive Machine Hour Rate = 1,37,480 ÷ 5,760 hrs. = ₹ 23.87 per hr.

Section B

Question.19

ABC Ltd. Provides you the following information:

Installed capacity	**1,50,000 units**
Actual production and sales	**1,00,000 units**
Selling price per unit	**Re. 1**
Variable cost per unit	**Re. 0.50**
Fixed costs	**₹ 38,000**
Funds required	**₹ 1,00,000**

	Financial plan		
Capital structure	**A**	**B**	**C**
Equity shares of ₹ 100 each to be issued at 25% premium	**60%**	**40%**	**35%**
15% debt	**40%**	**60%**	**50%**
10% preference shares ₹ 100 each	**-**	**-**	**15%**
No. of Equity Share	**480**	**320**	**280**

(Assume Income tax @ 40%)

Required:

(i) To calculate the degree of operating leverage, degree of financial leverage and degree to combined leverage for each financial plan.

(ii) To calculate earnings per share and market price per share if price earning ratio in A plan is 10 times and in B and C plan is 8 times.

(iii) To suggest which form of financing should be employed if the firm follows the policy of seeking to maximize the price of its shares.

(iv) To calculate the indifference point between A and B plan.

(v) To calculate the financial breakeven point for each plan and to suggest which plan has more financial risk.

(vi) To calculate the cost breakeven point.

Answer:

Part (i), (ii) and (iii) Statement showing the calculation of degree of various leverages etc.

Particulars	**Financial Plan A ₹**	**Financial Plan B ₹**	**Financial Plan C ₹**
Sales	1,00,000	1,00,000	1,00,000
Less : Variable cost	50,000	50,000	50,000
Contribution	50,000	50,000	50,000
Less : Fixed Costs	38,000	38,000	38,000

Earnings before Interest & tax (EBIT)	12,000	12,000	12,000
Less : Interest	6,000	9,000	7,500
Earnings before tax (EBIT)	6,000	3,000	4,500
Less : Tax @ 40%	2,400	1,200	1,800
Earnings after tax (EAT)	3,600	1,800	2,700
Less : Pref. Dividend	-	-	1,500
Earnings for equity shareholders	3,600	1,800	1,200
No. of equity shares	480	320	280
Earnings per share (EPS)	7.5	5.625	4.286
Price earning ratio	10	8	8
Market price	75	45	34.286
Operating leverage (Contribution/ EBIT)	4.167	4.167	4.167
Financial leverage (EBIT/ EBT) [EBT= EBT – (Pref. Dividend /1 – t)]	2.000	4.000	6.000
Combined leverage (Operating leverage x Financial Leverage)	8.334	16.668	25.002

Recommendation: The market price is highest under Financial Plan A, therefore Financial Plan A is recommended.

(iv) Calculation of Indifference Point between Plan A and Plan B

Particulars	**Plan A**	**Plan B**
EBIT	X	X
Less : Interest	6,000	9,000
EBT	X – 6,000	X – 9,000
Less : Tax @ 40%	0.4X – 2,400	0.4X – 3,600
EAT	0.6X – 3,600	0.6X – 5,400
No. of shares	480	320
EPS	$\frac{0.6X - 3,600}{480}$	$\frac{0.6X - 5,400}{320}$

At different point, EPS under both plans will be equal.

$$\frac{0.6x - 3,600}{480} = \frac{0.6x - 5,400}{320}$$

192X – 11,52,000 = 288X – 25,92,000
96X = 14,40,000
X = 15,000

The indifference point between Plan A and Plan B is at the EBIT level of ` 15,000

(v) Statement showing the calculation of Financial BEP

Particulars	**Plan A**	**Plan B**	**Plan C**
Interest	6,000	9,000	7,500
Preference dividend (after grossing up to tax) [Preference Dividend /1 - t]	-	-	2,500
Financial BEP	6,000	9,000	10,000

Comment: Since financial BEP for Plan C is highest, Plan C has the highest Financial Risk.

(vi) Statement showing the calculation of Cost or operating BEP

Particulars	Plan A	Plan B	Plan C
Fixed cost	38,000	38,000	38,000
P/V Ratio	50%	50%	50%
Cost BEP (in ₹) [Fixed Cost / P/V Ratio]	76,000	76,000	76,000
Cost BEP (in units) [BEP /Selling price per unit]	76,000	76,000	76,000

Question.20

(a) From the following information, ascertain whether the firm is following an optimal dividend policy as per Walter's model :

Total earnings	**₹ 6,00,000**
No. of equity shares of ₹ 100 each	**40,000**
Dividend paid	**₹ 1,60,000**
Price-earnings (P/E) Ratio	**10**

The firm is expected to maintain its rate of return of fresh investment. What should be the P/E ratio at which dividend policy will have no effect on the value of the share? Will your decision change if the P/E ratio is 5 instead of 10?

Answer:

Calculation of market price of share under Walter's model:

$$P = \frac{D + \frac{R_a}{R_C}(E - D)}{R_C}$$

Where P = Market price per share
E = Earnings per share
D = Dividend per share
R_a = Internal rate of return on investment
R_C = Cost of capital

Dividend per share (D) = ₹ 1,60,000 / 40,000 shares = ₹ 4
Earnings per share (E) = ₹ 6,00,000 / 40,000 shares = ₹ 15

Rate of return on firms investment (R_a)
= ₹ 6,00,000 /₹40,00,000 x 100 = 15% of 0.15

R_C = Cost of capital (inverse of P/E ratio i.e. 1/10) = 0.10

$$P = \frac{4 + \frac{0.15}{0.10}(15 - 4)}{0.10} = 20.50 / 0.10 = ₹ 205$$

Calculation of P/E ratio at which dividend policy will have no effect on the value of the share

Firm's dividend payout ratio = ₹ 1,60,000/ ₹ 6,00,000 = 0.2667 or 26.67%

Rate of return of the firm (R_a) is 15%, which is more than its cost of capital (R_c) is 10%. Therefore, by distributing 16.67% of earnings, the firm is not following an optimal dividend policy. The optimal dividend policy for the firm would be to pay zero dividend and in such case, the market value of share under Walter's model would be as follows :

$$P = \frac{0 + \frac{0.15}{0.10}(15-10)}{0.10} = 22.50 / 0.10 = ₹ 225$$

The market value of the share would increase by not paying dividend and by retaining all the earnings of the company.

Calculation of market value of share when P/E ratio is 5 instead of 10.

The R_c of the firm is the inverse of P/E ratio i.e. 1/5 = 0.20. In such case $R_c > R_a$

$$P = \frac{4 + \frac{0.15}{0.20}(15-4)}{0.20} = 12.25 / 0.20 = ₹ 61.25$$

The P/E ratio at which the dividend policy will have no effect on the value of the firm when R_c is equal to the rate of return of the firm R_a. Under the situation, P/E ratio is 5, the optimum dividend policy for the company would be 100% dividend payout at which the value of the firm would be maximum.

(b) M Ltd. has a capital of ₹ 10,00,000 in equity shares of ₹ 100 each. The shares are currently quoted at par. The company proposes declaration of a dividend of ₹ 10 per share. The capitalization rate for the risk class to which the company belongs is 12%.
What will be the market price of the share at the end of the year, if – (i) no dividend is declared; and (ii) 10% dividend is declared?
Assuming that the company pays the dividend and has net profits of ₹ 5,00,000 and makes new investments of ₹ 10,00,000 during the period, how many new shares must be issued ? Use the M. M. Model.

Answer:

(i) Calculation of share price under MM – Dividend Irrelevancy Model

$$P_0 = P_1 + D_1 / 1 + k_e$$

(a) When dividend is not declared

$100 = (P_1 + 0 / 1 + 0.12)$
$P_1 = 100 \times 1.12$
$= ₹ 112$

(b) When dividend is declared

$100 = (P_1 + 10 / 1 + 0.12)$
$P_1 + 10 = 100 \times 1.12$
$= ₹ 102$

(ii) Calculation of No. of shares to be issued

(₹)

Particulars	**If no dividend declared**	**If dividend declared**

Net income		5,00,000	5,00,000
Less : Dividend paid		-	1,00,000
Retained earnings		5,00,000	4,00,000
New investments		10,00,000	10,00,000
Amount to be raised by issue of new shares	(i)	5,00,000	6,00,000
Market price per share	(ii)	112	102
No. of new shares to be issued	(i)/(ii)	4,464	5,882

Verification of M. M. Dividend Irrelevancy Theory

Particulars		If no dividend declared	If dividend declared
Existing shares		10,000	10,000
New shares		4,464	5,882
Total no. of shares at the year end	(i)	14,464	15,882
Market price per share	(ii)	112	₹ 102
Total market value of shares at the end of year	(i)x(ii)	₹ 16,20,000	₹ 16,20,000

Analysis – The market value of shares at the end of year will remain the same whether dividends are distributed or not declared.

Question.21

(a) Explore the interrelationship between Investment, Finance and Dividend Decisions.

Answer:

The finance functions are divided into three major decisions, viz., investment, financing and dividend decisions. It is correct to say that these decisions are inter-related because the underlying objective of these three decisions is the same, i.e. maximisation of shareholders' wealth. Since investment, financing and dividend decisions are all interrelated, one has to consider the joint impact of these decisions on the market price of the company's shares and these decisions should also be solved jointly. The decision to invest in a new project needs the finance for the investment. The financing decision, in turn, is influenced by and influences dividend decision because retained earnings used in internal financing deprive shareholders of their dividends. An efficient financial management can ensure optimal joint decisions. This is possible by evaluating each decision in relation to its effect on the shareholders' wealth.

The above three decisions are briefly examined below in the light of their inter-relationship and to see how they can help in maximising the shareholders' wealth i.e. market price of the company's shares.

Investment decision: The investment of long term funds is made after a careful assessment of the various projects through capital budgeting and uncertainty analysis. However, only that investment proposal is to be accepted which is expected to yield at least so much return as is adequate to meet its cost of financing. This have an influence on the profitability of the company and ultimately on its wealth.

Financing decision: Funds can be raised from various sources. Each source of funds involves different issues. The finance manager has to maintain a proper balance between long-term and short-term funds. With the total volume of long-term funds, he has to ensure a proper mix of loan funds and owner's funds. The optimum financing mix will increase return to equity shareholders and thus maximise their wealth.

Dividend decision: The finance manager is also concerned with the decision to pay or declare dividend. He assists the top management in deciding as to what portion of the

profit should be paid to the shareholders by way of dividends and what portion should be retained in the business. An optimal dividend pay-out ratio maximises shareholders' wealth. We can infer from the above discussion that investment, financing and dividend decisions are interrelated and are to be taken jointly keeping in view their joint effect on the shareholders' wealth.

(b) A newly formed company has applied for a short-term loan to a commercial bank for financing its working capital requirement.

As a Cost Accountant, you are asked by the bank to prepare an estimate of the requirement of the working capital for that company. Add 10% to your estimated figure to cover unforeseen contingencies.

The information about the projected Profit and Loss Account of the company is as under:

		₹
Sales		**21,00,000**
Cost of goods sold		**15,30,000***
Gross profit		**5,70,000**
Administrative expenses	**1,40,000**	
Selling expenses	**1,30,00**	**2,70,000**
Profit before tax		**3,00,000**
Provision for tax		**1,00,000**

***Cost of goods sold has been derived as:**

Materials used	**8,40,000**	
Wages and manufacturing expenses	**6,25,000**	
Depreciation	**2,35,000**	**17,00,000**
Less: Stock of finished goods (10 % produced, not yet sold)		**1,70,000**
		15,30,000

The figures given above relate only to the goods that have been finished and not to work-in-progress; goods equal to 15% of the year's production (in terms of physical units) are in progress on an average, requiring full materials but only 40% of the other expenses. The company believes in keeping two months' consumption of material in stock.

All expenses are paid one month in arrears' suppliers of material extend 1 ½ months' credit; sales are 20% cash; rest are at two months' credit, 70% of the income-tax has to be paid in advance in quarterly installments.

You can make such other assumptions as you deem necessary for estimating working capital requirement.

Answer:

Statement showing the Net Working Capital Estimate of a Company:

Current Assets:	₹	₹	₹
Stock of raw material (2 months): (₹ 8,40,000 x 2/12)			1,40,000
Work-in-progress:			
Raw materials (₹ 8,40,000 x 15/100)		1,26,000	
Other expenses:			
Wages and manufacturing exp.	6,25,000		
Administrative expenses	1,40,000		
	(7,65,000 x 40%)	3,06,000	4,32,000

Stock of finished goods:			
Stock		1,70,000	
Less: Depreciation 10%			
(i.e. 2,35,000 x 10%)		23,500	1,46,500
Debtors (2 months):			
Cost of goods sold – Dep. (15,30,000 – 2,11,500)		13,18,500	
[Dep. (2,35,000 – 23,500)]			
Administrative expenses		1,40,000	
Selling expenses		1,30,000	
Total		15,88,500	
Less: Cash sales @ 20%		3,17,700	
	(12,70,800x2/12)		2,11,800
Cash (say)			50,700
Total investment in current assets			9,81,000
Less: Current liabilities:			
Creditors (1 ½ months) [₹ 8,40,000 /12) x 1 ½]		1,05,000	
Lag in payment of expenses (1month):			
Wages and manufacturing expenses			
(₹ 6,25,000 x 1/12)	=52,083		
Administrative expenses			
(₹ 1,40,000 x 1/12)	= 11,667		
Selling expenses			
(₹ 1,30,000 x 1/12)	= 10,833	74,583	1,79,583
Net working capital			8,01,417
Add: 10% for contingencies			80,142
Estimated working capital requirement			8,81,559

Notes:

(i) Depreciation is excluded from the computation of cost of goods sold as it is a non-cash item.

(ii) Element of profit is excluded here.

(iii) Assume that cash is required for ` 50,700 in order to meet the day-to-day expenses.

Question.22

(a) Superior Engineering proposes a project with the following data :

(i) Total asset: ₹ 450 lakhs (₹ 250 lakhs of Fixed Assets and ₹ 200 lakhs of Current Assets)

(ii) Scheme of financing: ₹ 100 lakhs equity, ₹ 200 lakhs term loan, ₹ 100 lakhs working capital advance and ₹ 50 lakhs trade creditors.

(iii) Interest rate: Term loan 12% p.a. and working capital advance: 15% p.a.

(iv) Term loan is repayable in 5 equal installments, commencing from 3rd year of operations. (Assume that installment for each year is paid on the last day of the year).

(v) Depreciation: 30% on written down value.

(vi) Production is expected to reach 60% of capacity in the 1st year of operations, 70% in the 2nd year and 80% from the 3rd year onwards.

(vii) Expected revenue from the project will be ₹ 500 lakhs p.a. on 10% capacity utilization and corresponding Direct Costs are ₹ 200 lakhs. Fixed costs are ₹ 100 lakhs p.a.

Working capital advance of ₹ 100 lakhs is on 80% capacity and proportionately reduced in the first two years.

(viii) Tax rate applicable is 50%.

Assuming that each year's production is sold away in the same year, draw the projected profit & loss account for each year of operation and the operational cash flow. Also calculate the Debt Service Coverage Ratio.

Answer:

Projected Profit & Loss Account

Year of operation	1	2	3	4	5	6	7
Capacity utilization (%)	60	70	80	80	80	80	80
							(₹ In lakhs)
Revenue	300	350	400	400	400	400	400
Direct variable costs	120	140	160	160	160	160	160
Fixed costs	100	100	100	100	100	100	100
Int. on working cap. adv.	11.25	13.13	15.00	15.00	15.00	15.00	15.00
Profit before depreciation & interest on term loan	68.75	96.87	125.00	125.00	125.00	125.00	125.00
Depreciation	75.00	52.50	36.75	25.73	18.01	12.61	8.82
Interest on term loan	24.00	24.00	24.00	19.20	14.40	9.60	4.80
Profit after dep. & int.	(-) 30.25	20.37	64.25	80.07	92.59	102.80	111.38
Tax @ 50%	-	10.19	32.13	40.04	46.30	51.40	55.69
PAT	-	10.19	32.13	40.04	46.30	51.40	55.69
Operational cash flow (PAT + Dep. + Int. on term loan)	68.75	86.68	92.87	84.96	78.70	73.60	69.31
Payments							
Int. on term loans	24.00	24.00	24.00	19.20	14.40	9.60	4.80
Repayment of terms loan	-	-	40.00	40.00	40.00	40.00	40.00
Total	24.00	24.00	64.00	59.20	54.40	49.60	44.80
DSCR (Op. cash flow/ Total payments)	2.86	3.61	1.45	1.44	1.45	1.48	1.55

Average DSCR = (Total operation cash flow) / (Total payment against debts)
= (554.87 ÷ 320.00) = 1.73.

(b) Write down the Criticism on MM Hypothesis?

Answer:

Criticism on MM Hypothesis

The arbitrage process is the behavioural and operational foundation for MM Hypothesis. But this process fails the desired equilibrium because of the following limitations.

(i) Rates of interest are not the same for the individuals and firms. The firms generally have a higher credit standing because of which they can borrow funds at a lower rate of interest as compared to individuals.

(ii) Home – Made leverage is not a perfect substitute for corporate leverage. If the firm borrows, the risk to the shareholder is limited to his shareholding in that company. But if he borrows personally, the liability will be extended to his personal property also. Hence, the assumption that personal or home – made leverage is a perfect substitute for corporate leverage is not valid.

(iii) The assumption that transaction costs do not exist is not valid because these costs are necessarily involved in buying and selling securities.

(iv) The working of arbitrage is affected by institutional restrictions, because the institutional investors are not allowed to practice home – made leverage.

(v) The major limitation of M – M hypothesis is the existence of corporate taxes. Since the interest charges are tax deductible, a levered firm will have a lower cost of debt due to tax advantage when taxes exist.

Question.23

(a) The projected cash flows and the expected net abandonment values for a project are given below:

Year	Cash inflows (₹)	Abandonment value (₹)
0	**(-) 1,00,000**	**Nil**
1	**35,000**	**65,000**
2	**30,000**	**45,000**
3	**25,000**	**20,000**
4	**20,000**	**nil**

Should the project be abandoned and if so, when?
Cost of capital may be taken as 10%.
Present value (PV) factor @ 10% is 1.000, 0.909, 0.826, 0.751 an d0.683 for 0,1,2,3 & 4 years respectively.

Answer

Expected NPV over 4 years of economic life:

Year	Cash flow (₹)	Abandonment value (₹)	PV factor @ 10%	NPV (₹) of cash flow	NPV (₹) of abandonment value
0	(-) 1,00,000	-	1.000	(-) 1,00,000	-
1	35,000	65,000	0.909	31,815	59,085
2	30,000	45,000	0.826	24,780	37,170
3	25,000	20,000	0.751	18,775	15,020
4	20,000	-	0.683	13,660	-
Total				(-) 10,970	

From the table above, the Total NPV of the project (NPV of cash flows + NPV of abandonment value) at the end of each year are computed as shown below:

Year	Total NPV at the end of			
	3 years	2 years	1 year	
0	(-) 1,00,000	(-) 1,00,000	(-) 1,00,000	
1	31,815	31,815	31,815	
			59,085	Abandonment value
2	24,780	24,780		
		37,170	Abandonment value	

3	18,775			
	15,020	Abandonment value		
Total	(-) 9,610	(-) 6,235	(-) 9,100	

Conclusion: The project should be abandoned since there is no +ve NPV at the end of any year. Further, it should be abandoned at the end of 2nd year, where the losses are the minimal.

(b) State the importance of Cost of Capital.

Answer:

Importance of Cost of Capital

The Cost of Capital is very important in Financial Management and plays a crucial role in the following areas:

(i) Capital budgeting decisions: The cost of capital is used for discounting cash flows under Net Present Value method for investment proposals. So, it is very useful in capital budgeting decisions.

(ii) Capital structure decisions: An optimal capital is that structure at which the value of the firm is maximum and cost of capital is the lowest. So, cost of capital is crucial in designing optimal capital structure.

(iii) Evaluation of final Performance: Cost of capital is used to evaluate the financial performance of top management. The actual profitably is compared with the actual cost of capital of funds and if profit is greater than the cost of capital the performance nay be said to be satisfactory.

(iv) Other financial decisions: Cost of capital is also useful in making such other financial decisions as dividend policy, capitalization of profits, making the rights issue, etc.

Question.24

A company is considering two mutually exclusive projects X and Y. Project X costs ₹ 30,000 and Project Y ₹ 36,000. You are given below the net present value probability.

Project X		Project Y	
NPV estimate (₹)	**Probability**	**NPV estimate (₹)**	**Probability**
3,000	**0.1**	**3,000**	**0.2**
6,000	**0.4**	**6,000**	**0.3**
12,000	**0.4**	**12,000**	**0.3**
15,000	**0.1**	**15,000**	**0.2**

(i) Compute the expected net present value of projects X and Y.

(ii) Compute the risk attached to each project.

(iii) Which project do you consider more risky and why?

(iv) Compute the probability index of each project.

Answer:

(i) Statement showing computation of expected net present value of the projects X and Y.

Project X			Project Y		
NPV estimate (₹)	**Probability**	**Expected value**	**NPV estimate (₹)**	**Probability**	**Expected value**
3,000	0.1	300	3,000	0.2	600
6,000	0.4	2,400	6,000	0.3	1,800

12,000	0.4	4,800	12,000	0.3	3,600
15,000	0.1	1,500	15,000	0.2	3,000
	1.0	EV = 9,000		1.0	EV = 9,000

Thus the expected net present value of both projects X and Y are same.

(ii) Computation of Standard Deviation of each project :

For Project X

Probability (P)	NPV Estimates (₹) (μ)	(μ - 9,000)	P (μ - 9,000)²
0.1	3,000	-6,000	36,00,000
0.4	6,000	-3,000	36,00,000
0.4	12,000	+ 3,000	36,00,000
0.1	15,000	+ 6,000	36,00,000
1.0		Variance	1,44,00,000

Standard deviation of Project X = √1,44,00,000 = ₹ 3,794.73

For Project Y

Probability (P)	NPV Estimates (₹) (μ)	(μ - 9,000)	P (μ - 9,000)²
0.2	3,000	- 6,000	72,00,000
0.3	6,000	- 3,000	27,00,000
0.3	12,000	+ 3,000	27,00,000
0.2	15,000	+ 6,000	72,00,000
		Variance	1,98,00,000

Standard deviation of Project Y = √1,98,00,000 = ₹ 4,450

(iii) Risk is measured by the possible variation of outcomes around the expected value and the decision will be taken keeping in view the variation in the expected value where two projects have the same expected value, the decision maker would choose the project which has smaller variation in expected value.
In the selection of one of the two projects X and Y, project Y is preferable because the possible profit which may occur is subject to loss variation (or dispersion), much higher risk is lying with project Y.

(iv) Computation of profitability of each project :

Profitability Index = Present value of cash inflows ÷ Present value of cash outflow

NPV = Sum of total cash inflows – Project cost

Sum of total cash inflows = Project cost + NPV

Project X = ₹ 30,000 + ₹ 9,000 = ₹ 39,000

Project Y = ₹ 36,000 + ₹ 9,000 = ₹ 45,000

Profitability Index:

Project X = ₹ 39,000/ 30,000 = 1.30

Project Y = ₹ 45,000/ 36,000 = 1.25

Thus profitability index of Project X is more than that of Project Y.

Question.25

(a) The following is the condensed Balance sheet of NHPC Ltd. at the beginning and end of the year.

Balance Sheets

As at ……..

Particulars	31.12.2011	31.12.2012
Cash	50,409	40,535
Sundry debtors	77,180	73,150
Temporary investments	1,10,500	84,000
Prepaid expenses	1,210	1,155
Inventories	92,154	1,05,538
Cash surrender value of Life Insurance Policy	4,607	5,353
Land	25,000	25,000
Building, machinery etc.	1,47,778	1,82,782
Debenture discount	4,305	2,867
	5,13,143	5,20,380
Sundry creditors	1,03,087	95,656
Outstanding expenses	12,707	21,663
4% mortgage debentures	82,000	68,500
Accumulated depreciation	96,618	81,633
Allowance for inventory loss	2,000	8,500
Reserve for contingencies	1,06,731	1,34,178
Surplus in P & L A/c	10,000	10,250
Share capital	1,00,000	1,00,000
	5,13,143	5,20,380

The following information concerning the transaction are available:

(i) Net profit for 2012 as per Profit and loss account was ₹ 49,097

(ii) A 10% cash dividend was paid during the year.

(iii) The premium of Life Insurance Policies were ₹ 2,773 of which ₹ 1,627 was charged to Profit and Loss Account of the year.

(iv) New machinery was purchased for ₹ 31,365 and machinery costing ₹ 32,625 was sold during the year. Depreciation on machinery sold had accumulated to ₹ 29,105 at the date of sale. It was sold as scrap for ₹ 1,500. The remaining increase in Fixed Assets resulted from construction of a Building.

(v) The Mortgage Debentures mature at the rate of ₹ 5,000 per year. In addition to the above, the company purchased and retired ₹ 8,500 of Debentures at ₹ 103. Both the premium on retirement and the applicable discount were charged to Profit and Loss Account.

(vi) The allowance for Inventory Loss was created by a charge to expenses in each year to provide for obsolete items.

(vii) A debit to reserve for contingencies of ₹ 11,400 was made during the year. This was in respect of a past tax liability.

You are required to prepare a statement showing the Sources and Applications of funds for the year 2012.

Answer:

Statement of Sources and Applications of Funds
For the year ended 31st December 2013

Sources	₹	Applications	₹
Sale of Machinery	1,500	Purchase of machinery	31,365
Trading profit (adjusted)	75,457	Payment for construction of building	36,264
	76,957	Dividend paid	10,000
Add: Decrease in working capital	28,600	Redemption of debentures	13,755

		Tax liability paid	11,400
		Premium on Life Policy (1,146 + 1,627)	2,773
	1,05,557		1,05,557

Workings:

Statement of Change in Working Capital

	2012 ₹		2013 ₹	
Current Assets :				
Cash		50,409		40,535
Sundry debtors		77,180		73,150
Temporary investments		1,10,500		84,000
Prepaid expenses		1,210		1,155
Inventories		92,154		1,05,538
		3,31,453		3,04,378
Less : Current Liabilities :				
Sundry creditors	1,03,087		95,656	
Out. Expenses	12,707		21,663	
		1,15,794		1,17,319
Working capital		2,15,659		1,87,059
Decrease in working capital		-		28,600
		2,15,659		2,15,659

4% Mortgage Debenture A/c.

Dr. Cr.

Particulars	₹	Particulars	₹
To, 4% Mortgage debenture holders	13,500	By bal b/d	82,000
To, Bal c/d	68,500		
	82,000		82,000

4% Mortgage Debenture holders' A/c.

Dr. Cr.

Particulars	₹	Particulars	₹
To, Bank A/c.	13,755	By, 4% Mortgage debenture a/c.	13,500
		By, P & L A/c.	255
	13,755		13,755

Accumulated Depreciation A/c.

Dr. Cr.

Particulars	₹	Particulars	₹
To, Building, machinery etc.	29,105	By, Bal b/d	96,618
To, Bal c/d	81,633	By, P & L A/c.	14,120
	1,10,738		1,10,738

Allowance for Inventory Loss A/c.

Dr. Cr.

Particulars	₹	Particulars	₹
To, Bal c/d	8,500	By, Bal b/d	2,000
		By, P & L A/c. (bal. fig.)	6,500

	8,500		8,500

Reserve for Contingencies A/c.

Dr. Cr.

Particulars	₹	Particulars	₹
To, Tax liability (paid)	11,400	By, Bal b/d	1,06,731
To, Bal c/d	1,34,178	By, P & L A/c. (bal. fig.)	38,847
	1,45,578		1,45,578

Life Insurance Policy A/c.

Dr. Cr.

Particulars	₹	Particulars	₹
To, Bal b/d	4,607	By, P & L A/c. (excess over surrender value)	400
To, Bank (premium)	1,146	By, Balance c/d	5,353
	5,753		5,753

Building and Machinery A/c.

Dr. Cr.

Particulars	₹	Particulars	₹
To, Balance b/d	1,47,778	By, Accumulated Dep.	29,105
To, Bank a/c (Purchase)	31,365	By, Bank a/c. (sales)	1,500
To, Bank a/c. (bal. fig.) (Construction cost of building)	36,264	By, P & L a/c. (loss on sale)	2,020
		By, Balance c/d	1,82,782
	2,15,407		2,15,407

Debenture Discount A/c.

Dr. Cr.

Particulars	₹	Particulars	₹
To, Balance b/d	4,305	By, P & L a/c. (bal. fig.)	1,438
		By, Balance c/d	2,867
	4,305		4,305

Profit and Loss A/c.

Dr. Cr.

Particulars	₹	Particulars	₹
To, Dividend	10,000	By, Balance b/d	10,000
To, Life insurance policy	400	By, Trading profit (adjusted bal. fig.)	75,457
To, Debenture discount	1,438		
To, Reserve for contingencies	38,847		
To, Allow. For inventory loss	6,500		
To, 4% Mort. Debentureholders	255		
To, Accumulated depreciation	14,120		
To, Building and Mach. (loss)	2,020		
To, Bank (life insurance premium)	1,627		
To, Balance c/d	10,250		
	85,457		85,457

Question.26

(a) List out the features of Security and Exchange Board of India.

Answer:

The burgeoning growth of the stock markets in India has necessitated the establishment of a separate regulating agency for the securities market. Accordingly, Indian Government has passed the Securities & Exchange Board of India Act, 1992 to provide the establishment of the Securities & Exchange Board of India on the lines of Securities Exchange Commission of USA to protect the interests of investors in securities and to promote the development of and to regulate the securities market. The main features of SEBI are as follows:

(i) SEBI is an autonomous body created by the Government of India in 1988 and given statutory form in 1992 with the SEBI Act 1992.

(ii) Its Head office is in Mumbai and has regional offices in Chennai, Kolkata, and Delhi.

(iii) SEBI is the regulator of Securities markets in India.

(iv) SEBI has to be responsive to the needs of three groups, which constitute the market:

- The issuers of securities.
- The investors.
- The market intermediaries.

(v) SEBI has three functions rolled into one body quasi-legislative, quasi-judicial and quasi-executive.

(vi) It drafts regulations in its legislative capacity, it conducts investigation and enforcement action in its executive function and it passes rulings and orders in its judicial capacity.

(vii) Though this makes it very powerful, there is an appeal process to create accountability. There is a Securities Appellate Tribunal which is a three member body.

(viii) A second appeal lies directly to the Supreme Court.

(b) Distinguish between Fund Flow Statement and Cash Flow Statement.

Answer:

The following are the main differences between a Funds Flow Statement and a Cash Flow Statement:-

Funds Flow Statement	Cash Flow Statement
1. Funds Flow Statement reveals the change in working capital between two Balance Sheet dates	Cash Flow Statement reveals the changes in cash position between two balance sheet dates.
2. Funds Flow Statement is based on accounting	Cash Flow Statement is based on cash basis of accounting
3. In the case of Funds Flow Statement a schedule of changes in working capital is prepared.	No such schedule of changes in working capital is prepared for a Cash Flow Statement.
4. Funds Flow Statement is useful in planning, Intermediate and long term financing.	Cash Flow Statement as a tool of financial analysis is more useful for short-term analysis and cash planning.
5. Funds Flow Statement deals with all components of working capital.	Cash Flow Statement deals only with cash and cash equivalents.
6. Funds Flow Statement reveals the sources and	Cash Flow Statement is prepared by taking into

Funds Flow Statement	Cash Flow Statement
application of funds. The difference represents net increase or decrease in working capital.	consideration the inflows and outflows in terms of operating, investing and financing activities. The net difference represents the net increase or decrease in cash and cash equivalents.

Question.27

From the following information, prepare Trading and Profit and Loss Account:

Debt-Equity Ratio (Long-term Debt/Shareholders' Funds)	**2:1**
Capital Gearing Ratio	**3:1**
(Funds bearing fixed payments to Equity Shareholder's Funds)	
15% Long-term Debts	**₹ 8,00,000**
Return on Equity Shareholder's Funds	**25%**
Tax Rate	**50%**
15%Preference Share Capital	**?**
Break-up of Cost Profit:	
Materials	**40%**
Labour	**25%**
Manufacturing Expenses	**10%**
Depreciation on Plant	**10%**
Office & Selling Expenses	**2.5%**
Operating Profit	**12.5%**
	100%

Answer

Dr. **Trading and Profit & Loss Account for the year ended.....** Cr.

Particulars	₹	Particulars	₹
To Materials	9,60,000	By Sales	24,00,000
To Labour Expenses	6,00,000		
To Mfg. Expenses	2,40,000		
To Depreciation	2,40,000		
To Gross Profit @ 15%	3,60,000		
	24,00,000		24,00,000
To Office & Adm. Exp.	60,000		
To Interest @ 15%	1,20,000	By Gross Profit	3,60,000
To Tax 50%	90,000		
To Net Profit after Tax	90,000		
	3,60,000		3,60,000
To Preference Dividend	15,000		
To Balance for Equity Shareholders @ 25%	75,000	By Net Profit after Tax	90,000
	90,000		90,000

Working Notes:

(i) Calculation of Equity Shareholders' Funds Long-term Debts

$$\text{Debt Equity Ratio} = \frac{\text{Lont-termdebt}}{\text{Shareholders Fund}}$$

2 = ₹ 8,00,000 / Shareholders' Funds
Shareholders' Funds = ₹ 8,00,000/2 = ₹ 4,00,000

Supposing Pref. Share Capital = x
Equity Shareholders' Funds = ₹ 4,00,000 – x

(ii) Calculation of Pref. Share Capital

$$\text{Capital Gearing Ratio} = \frac{\text{Lont-termDebt Plus Pref. Share Capital}}{\text{Equity Shareholdres'Fund}}$$

3 = ₹ 8,00,000 + x / ₹ 4,00,000 - x
₹ 12,00,000 – 3x = ₹ 8,00,000 + x
x = ₹ 1,00,000
Pref. Share Capital = ₹ 1,00,000
Equity Shareholders' Fund = ₹ 4,00,000 – ₹ 3,00,000

(iii) Calculation of Operating Profit

$$\text{Return on Equity} = \frac{\text{Net Profit after Int. Tax \& Pref. Div.}}{\text{Equity Shareholders' Funds}}$$

25%= x / ₹ 3,00,000
x = ₹ 75,000

		₹
A.	Net Profit after Int. Tax & Pref. Dividend	75,000
B.	Add: Pref. Dividend	15,000
C.	Net Profit After Int. & Tax (A + B)	90,000
D.	Add: Tax @ 50%	90,000
E.	Net Profit before Tax	1,80,000
F.	Interest on Long-term Debt @ 15% on ₹ 8,00,000	1,20,000
G.	Operating Profit (E + F)	3,00,000

(iv) Calculation of Sales

Operating Cost Ratio (Material + Labour + Mfg. Exp. + Office & Selling Exp.	87.5%
Operating Profit Ratio	100 – 87.5% = 12.5%
Sales (Operating Profit / sales) × 100	₹ 3,00,000 /12.5% = ₹24,00,000
Material	40% of ₹ 24,00,000 = ₹9,60,000
Labour	25% of ₹ 24,00,000 = ₹ 6,00,000
Manufacturing Expenses	10% of ₹24,00,000 = ₹2,40,000
Office & Selling Expenses	2.5% of 24,00,000 = ₹ 60,000

Question.28

(a) The following information pertains to RICO Ltd.

	(Amount in ₹)
Net Profit	60
Outstanding 12% preference share	200

Number of share outstanding	6 lakh
Return on Investment	20%
Equity Capitalization rate	16%

Required:

(i) What should be dividend pay-out ratio so as to keep the share price at ` 41.25 bu using WALTER MODEL?

(ii) What is the optimum dividend pay-out ratio according to Walter Model.

Answer: (i)

	₹
Net Profit	60.00
Less: Preference dividend (0.12× 200 lakh)	24.00
Earning for Equity Shareholders	36.00
Earning per share (EPS)= 36 lakh /6 lakh	₹ 6.00 per sahre

Let the dividend payout ratio be X. So the share price will be:

Here,

D = Dividend per share = 6x

P = [D + (E – D) (r/Ke)] / Ke

P = Market price per share = ` 41.25

E = Earnings per share = ` 6

r = Return on investment = 20% = 0.20

Ke = Cost of equity = 16% = 0.16

Here, ₹41.25 = [6x+ (6 – 6x)(0.20/0.16)]/0.16

= [6x + (6 – 6x) ×1.25] / 0.16

= [6x + 7.50 – 7.5x] / 0.16

or, 6.6 = 7.50 – 1.5x

or 1.5x = 7.50 – 6.60 = 0.90

x = 0.90 / 1.5 = 0.60 i.e., 60%

So, the required dividend payout ratio will be : 60%.

(ii) According to Walter's model where the return on investment (20%) is more than the cost of equity, (16%) the price per share increase as the dividend payout ratio decrease. Hence the optimum dividend payout ratio in this case is nil.

(b) Venture Capital is considered to be a high risk capital. Do you agree? Enumerate the main features of Venture Capital investment.

Answer:

The venture capital can be defined as the "long term equity investments in business which display potential for significant growth and financial return".

The term 'venture capital' comprises of two words viz. 'venture' and 'capital'. The dictionary meaning of 'venture' is a course of proceedings associated with risk, the outcome of which is uncertain and 'capital means resources to start the enterprise. In a narrower sense venture capital is understood as the capital which is available for financing new venture. Broadly, it can be interpreted as the investment of long-term equity finance where the venture capitalist earns his return from capital gain.

The venture capital financing refers to the financing of new high risky venture promoted by qualified entrepreneurs who lack experience and funds to give shape to their ideas. In a broad sense, under venture capital financing, venture capitalist make investment to purchase equity of debt securities from inexperienced entrepreneurs who undertake highly risky venture with potential of success.

The main features of venture capital investment are:

(i) Providing finance of entrepreneurial talents

(ii) Providing capital to persons having managerial skills.

(iii) Expecting a high return in the form of capital gain.

The venture capital schemes are designed to promote technological advancement and innovation through introduction of new products, process or plants and equipments. The activities which, in general need venture capital support are:

(i) Commercial production of viable new process or products.

(ii) Technological up-gradation, including adoption of imported technology suitable to Indian condition.

(iii) Energy conservation with innovative technology.

(iv) Commercial exploitation of proven technology.

Thus, the distinguishing characteristic of venture capital sources is an investment policy aimed at achieving most of the profit through capital gain.

Question.29

(a) What are the characteristics of Financial Lease?

Answer:

A Financial Lease is usually characterized by the following features:

(i) The present value of the total lease rentals payable during the period of the lease exceeds or is equal substantially the whole of the fair value of the leased asset. It implies that within the lease period, the lessor recovers his investment in the asset along with an acceptable rate of return.

(ii) As compared to Operaring Lease, a Financial Lease is for a longer period of time.

(iii) It is usually non cancellable by the lessee prior to its expiration date.

(iv) The lessee is generally responsible for the maintenance, insurance and services of the asset. However, the terms of lease agreement, in some cases may require the lessor to maintain and service the asset. Such an arrangement is called "maintenance or gross lease". But usually in an Operating Lease, it is lessee who has to pay for maintenance and service costs and such a lease is known as "net lease".

(v) A Financial Lease usually provides the lessee an option of renewing the lease for further period at a normal rent.

(b) Write short note on Global Depository Receipt.

Answer:

Global Depository Receipt (GDR)

A GDR is a negotiable instrument, basically a bearer instrument which is traded freely in the international market either through the stock exchange or over the counter or among Qualified International Buyers (QIB).

It is denominated in US Dollars and represents shares issued in the local currency.

Characteristics

(i) The shares underlying the GDR do not carry voting rights.

(ii) The instruments are freely traded in the international market.

(iii) The investors earn fixed income by way of dividend.

(iv) GDRS can be converted into underlying shares, depository/ custodian banks reducing the issue.

The market of GDR: the GDR operates in the following way

(i) An Indian company issues ordinary equity shares.

(ii) These shares are deposited with a custodian bank (mostly domestic bank)

(iii) The custodian bank establishes a link with a depository bank overseas.

(iv) The depository bank, in turn issues depository receipts in dollars.
(v) Funds are raised when the foreign entities purchase those depository receipts at an agreed price.
(vi) The dividends on such issues are paid by the issuing company to the depository bank in local currency.
(vii) The depository bank converts the dividends into US Dollars at the ruling exchange rate and distributes it among the GDR holders.

Advantages of GDR

(i) The Indian companies are able to tap global equity market to raise currency.
(ii) The exchange risk borne by the investors as payment of the dividend is made in local currency.
(iii) The voting rights are vested only with depository.

Question.30

(a) Write down the advantages of Ratio Analysis.

Answer:

Advantages of Ratio Analysis

Ratio Analysis is (useful) relevant in assessing the performance of a firm in respect of the following purposes:

(i) To measure the liquidity position: The purpose of ratio analysis to measure the liquidity position of a firm. Whether the firm is able to meet its current obligations when they become due or not? A firm can be said to be liquid, if it has sufficient liquid funds to pay the interest charges on short-term debt within a year. The liquidity ratios are useful in credit analysis by banks and other financial institutions.

(ii) To know the solvency position: Ratio analysis is helpful for assessing the long-term financial liability of the firm. The long term solvency is measured through the leverage, and profitability ratios. These ratios reveal the strengths and weaknesses of a firm in respect of the solvency position. The leverage ratios indicate the proportion of various sources of finance in the firm's capital structure, particularly the ratio of debt and equity share capital.

(iii) Operating efficiency or turnover of the firm: The ratios are helpful in measuring the operating efficiency or the turnover of the firm. These ratios indicate the efficiency in utilizing the assets of the firm such as fixed assets turnover ratio, total resources turnover ratio etc.

(iv) To assess the profitability position of the firm: The ratios are useful to assess and measure the profitability of the firm in respect of sales and the investments. These ratios are concerned about the over –all profitability of the firm.

(v) Inter - firm and intra – firm comparison: Ratios are not only reflects the financial position of a firm, but also serves as a tool for remedial actions. This is made possible only due to inter-firm comparison. This would demonstrate the relative position of the firm vis-à-vis its competitors If there is any variance in the ratios either with the industry average or with, those of competitors, the firm has to identify the reasons and would take remedial measures.

(vi) Trend Analysis: The trend analysis of ratios indicates whether the financial position of a firm is improving or deteriorating over the yea ` The significance of a trend analysis of ratio lies in the fact that the analysis can know the direction of movement whether the movement is favourable or unfavourable.

Thus, ratio analysis is considered better than a mere comparison of figures in carrying out an over – all appraisal of a company's business.

(b) Surya Industries Ltd. is marketing all its products through a network of dealers. All sales are on credit and the dealers are given one month time to settle bills. The company is thinking of changing the credit period with a view to increase its overall profits. The marketing department has prepared the following estimates for different periods of credit:

Particulars	Present Policy	Plan I	Plan II	Plan III
Credit period (in months)	1	1.5	2	3
Sales (₹ Lakhs)	120	130	150	180
Fixed costs (₹ Lakhs)	30	30	35	40
Bad debts (% of sales)	0.6	0.9	1	2

The company has a contribution/sales ratio of 40% further it requires a pre-tax return on investment at 20%. Evaluate each of the above proposals and recommend the best credit period for the company.

Answer:

Analysis of Credit Policies **(₹ in Lakhs)**

Credit Period (months)	Current Policy (1)	Plan I (1.5)	Plan II (2)	Plan III (3)
Credit sales	120	130	150	180
Less: Variable cost @ 60%	72	78	90	108
Contribution	48	52	60	72
Less: Fixed cost	30	30	35	40
Operating Profit (a)	**18**	**22**	**25**	**32**
Cost of Sales (Variable Cost + Fixed Cost)	102	108	125	148
Investment in debtors [Cost of sales x Credit period / 12 months)	8.5	13.5	20.83	37.00
Cost of Investment in debtors @ 20% (b)	**1.70**	**2.70**	**4.17**	**7.40**
Credit sales	120	130	150	180
Bad debts (% of sales)	0.6%	0.9%	1%	2%
Bad debts (c)	**0.72**	**1.17**	**1.50**	**3.60**
Net Profit (a) – [(b) + (c)]	**15.58**	**18.13**	**19.33**	**21.00**

Analysis:

The net profit is higher if 3 months credit period is allowed. Hence, it is suggested to adopt plan III.