Paper – 8: Cost Accounting & Financial Management

The following table lists the learning objectives and the verbs that appear in the syllabus learning aims and examination questions:

	Learning objectives	Verbs used	Definition
LEVEL B	KNOWLEDGE What you are expected to know	List	Make a list of
		State	Express, fully or clearly, the details/facts
		Define	Give the exact meaning of
	COMPREHENSION What you are expected to understand	Describe	Communicate the key features of
		Distinguish	Highlight the differences between
		Explain	Make clear or intelligible/ state the meaning or purpose of
		Identity	Recognize, establish or select after consideration
		Illustrate	Use an example to describe or explain something
	APPLICATION How you are expected to apply your knowledge	Apply	Put to practical use
		Calculate	Ascertain or reckon mathematically
		Demonstrate	Prove with certainty or exhibit by practical means
		Prepare	Make or get ready for use
		Reconcile	Make or prove consistent/ compatible
		Solve	Find an answer to
		Tabulate	Arrange in a table
	ANALYSIS How you are expected to analyse the detail of what you have learned	Analyse	Examine in detail the structure of
		Categorise	Place into a defined class or division
		Compare and contrast	Show the similarities and/or differences between
		Construct	Build up or compile
		Prioritise	Place in order of priority or sequence for action
		Produce	Create or bring into existence

Paper- 8: Cost Accounting & Financial Management

Full Marks: 100 **Time Allowed: 3 Hours**

This paper contains 3 questions. All questions are compulsory, subject to instruction provided against each question. All workings must form part of your answer. Assumptions, if any, must be clearly indicated.

1. Answer all questions: **[2×10= 20]**

(a) Define Cost Apportionment.

Answer:

When items of cost cannot directly charge to or accurately identifiable with any cost centres, they are prorated or distributed amongst the cost centres on some predetermined basis. This method is known as cost apportionment. Thus we see that items of indirect costs residual to the process of cost allocation are covered by cost apportionment.

(b) The following information relating to a type of Raw material is available:

Annual Demand	**3,000 units**
Unit price	**₹20.00**
Ordering cost per order	**₹20.00**
Storage cost 2% p.a.	
Interest rate 8% p.a.	
Lead time Half- month	

Calculate economic order quantity.

Answer:

Economic order quantity (EOQ)

Annual consumption (A) = 3,000 units

Fixed cost per order (O) = ₹20

Carrying cost per unit p.a (CC) = ([₹20 p.u. × 2%) + (₹20 p.u × 8%)] = ₹2

$$\therefore \text{Economic Order Quantity} = \sqrt{\frac{2AO}{C}} = \sqrt{\frac{2\times 3{,}000\times 20}{2}}$$

$$= 245$$

(c) In a workshop the normal working hours is 8 hours for which ₹450 is paid as wages. However, calculation of wages payable is made on piece rate basis that 30 pieces will be produced per hour. When a worker produces below standard, 90% of the piece rate is paid but when he produces above standard, 110% of piece rate is paid. On a particular day, a worker produces 260 pieces in the allotted time of 8 hours. What will be his earning?

Answer:

Normal price rate = 450/240 = 1.875.

Standard Production= 8hrs x 30 pieces = 240 pieces

260 pieces in 8 hours is above standard of 240 pieces.

Hence, wages = 110 % x 1.875 x 260 = 536.25 or 536.

(d) State the treatment of Bad Debts in Cost record.

Answer:

We know bad debt refer to customers who do not pay money after having purchased the product. This situation arises after the sale is done. Many experts say that bad debt is not an item of expense but it's a financial loss and thus should be excluded for the purpose of costing. However normal bad debts may be considered as selling expense and included in the cost. An exceptional case like bankruptcy of a big institution may be excluded from the cost.

(e) A concern producing a single product estimates the following expenses for a production period.

Particulars	**₹**
Direct Material	**25,000**
Direct Labour	**25,000**
Direct Expenses	**2,500**
Overhead Expenses	**1,05,000**

What will be the overhead recovery rate based on prime cost?

Answer:

Prime cost = Direct Material + Direct Labour + Direct Expenses = ₹52,500
Overhead Expenses =₹ 2,10,000

Overhead recovery rate based on prime cost = ₹1,05,000/₹52,500 = 2 times or 200 % of prime cost.

(f) State the cost units applicable to the following industries:
Cement, Goods Transport, Education, BPO

Answer:

Cost units for the following industries

Industry	Cost unit	
Cement	Tonnes	Any unit of weight is acceptable (like quintals, kg, etc)
Goods Transport	Tonnes-Kilometer	Any unit that is a product of weight and length(distance) (like ton-miles, quintal-miles, etc)
Education	Student year	Any unit that is a product of no. of students and the duration -days/months or years
BPO	Accounts handled	Any unit in terms of number of transactions, or a product of number and value of transactions

(g) Calculate the future value of ₹1,000 invested in State Bank Cash Certificate scheme for 2 years @5.5% p.a., compounded semi-annually.

Answer:

$$= FV_n = PV\left(1+\frac{c}{m}\right)^{m\times n}$$

$$=1{,}000\left(1+\frac{0.055}{2}\right)^{2\times 2}$$

$=1{,}000(1.0275)^4$

$= 1{,}114.62$

(h) The capital of PQR Limited is as follows :
9% preference shares of ₹10 each ₹3,00,000
Equity shares of ₹10 each ₹8,00,000
Following further information is available:
Profit after Tax ₹2,70,000
Equity Dividend paid 20%
The market price of equity shares ₹40 each
Then the EPS and PE ratio are:

Answer:

$$EPS = \frac{PAT - Preference\,dividend}{No.\,of\,Equity\,share}$$

$$=\frac{2{,}70{,}000-27{,}000}{80{,}000}=3.04$$

$$PE\,ratio=\frac{Market\,price}{EPS}$$

$$=\frac{₹40}{3.04}$$

$=13.16$

(i) Cactus Limited paid a dividend of ₹5 per share for 2013-14. The company follows a fixed dividend payout ratio of 60%. The company earns a return of 20% on its investment. The cost of capital to the company is 14%. What would be the expected market price of its share, using the Walter Model?

Answer:

$$EPS = \frac{Dividend}{payout\,ratio}=\frac{₹5}{0.6}=8.33$$

$$\text{According to Walter Model} = P=\frac{D+(E-D)\times\frac{r}{k}}{k}$$

$$=\frac{5-(8.33-5)\times\frac{0.20}{0.14}}{0.14}$$

$= 69.69$

(j) X owns a stock portfolio equally invested in a risk free asset and two stocks. If one of the stocks has a beta of 0.8 and the portfolio is as risky as the market what must be the beta of the other stocks in the portfolio?

Answer:

Beta of market =βm = βp=1
Bp = 1/3(0.8) +1/3(x) + 1/3(0) =1
Solving, we get beta of other stock = 2.2

2. Answer any three questions) [3×16=48]

(a) (i)

The particulars relating to the import of Sealing Ring made by AB & Co. during December, 2014 are given below:

(a) Sealing Ring --1,000 pieces invoiced £ 2.00 C.I.F. Mumbai Port.

(b) Customs duty was paid @ 100% on invoice Value (which has converted to Indian currency by adopting an exchange rate of ₹ 17.20 per £)

(c) Clearing charges-- ₹1,800 for the entire consignment, and'

(d) Freight charges - ₹1,400 for transporting the consignment from Mumbai Port to factory premises.

It was found on inspection that 100 pieces of the above material were broken and, therefore, rejected.

There is no scrap value for the rejected part. No refund for the broken material would be admissible as per the terms of contract. The management decided to treat 60 pieces as normal loss and the rest 40 pieces as abnormal loss. The entire quantity of 900 pieces was issued to production.

Calculate

I. Total cost of material, and

II. Unit cost of material issued to production.

Also state briefly how the value of 100 pieces rejected in inspection will be treated in costs. [2+2+2= 6]

Answer:

AB & Co.

I.	**Computation of total cost of materials**	
	Sealing rings (1000 × 2 × 17.20)	₹34,400
	Customs duty 100% of Invoice value	34,400
	Clearing charges at port	1,800
	Freight charges -- Port to factory	1,400
	Total Cost of materials	72,000
II.	**Unit cost of material**	**Nos.**
	Total quantity received	1,000
	Less : Normal loss	60
		940
	Less: Abnormal loss	40
	Total pieces issued to production	900
	Total cost of materials	₹72,000

This is to be spread over 940 units.
Unit cost of material issued to production (₹ 72,000 ÷ 940) ₹ 76.5957

Note. The cost of normal loss is to be borne by production during the period and abnormal loss is treated like good units produced for the purpose of valuation.

Cost to be charged to production (900 units × ₹ 76.5957)	₹68,936
Cost to be charged off to P & I A/c (40 units × ₹ 76.5957)	3,064
	72,000

(ii) State the treatment of the following items in Cost Accounts:

I. Spoiled Work

II. Cost of Containers relating to Material Purchased [3+3]

Answer:

I. <u>Spoiled Work</u>

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.

II. <u>Cost of Containers Relating to Materials Purchased</u>

Usually the cost of the containers containing the materials purchased is included in the cost of materials and therefore is automatically forms a part of material cost. The containers may be returnable or non return-able. The cost of the non returnable contains should be charged as a part of the materials cost and ultimately would go into the Prime Cost or Factory Overhead depending upon the usage of the materials as direct or indirect. In the case of returnable containers the cost of them should not be included either in cost of materials or in any other head, because when they are returned to the supplier, full credit would be received. If, however, container becomes damaged, it should be charged to the cost of the materials.

(iii) State the reasons of over –absorption and under-absorption of overheads and list the methods of their absorption. [2+2=4]

Answer :

Reason for over/under absorption of overheads: Over/under-absorption of overheads arises due to one or more of the following reasons.

1) Improper estimation of overhead.
2) Error in estimating the level of production.
3) Unanticipated changes in the methods or techniques of production.

4) Under-utilisation of the available capacity.

5) 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:

1) Use of supplementary rates

2) Writing off to costing profit & loss Account

3) Carrying over to the next year's account

2.(b)(i)

Gemini Enterprises undertakes three different jobs A, B and C. All of them require, the use of a special machine and also the use of a computer. The computer is hired and the hire charges work out to ₹4,20,000 per annum. The expenses regarding the machine are estimated as follows:

Rent for the quarter	**₹17,500**
Depreciation per annum	**2,00,000**
Indirect charges per annum	**1,50,000**

During the first month of operation the following details were taken from the job register;

Job	**A**	**B**	**C**
Number of hours the Machine was used:			
(a) Without the use of the Computer	**600**	**900**	**-**
(b) With the use of the Computer	**400**	**600**	**1,000**

You are required to compute the machine hour rate:-

I. For the firm as a whole for the month when the computers was used and when the computer was not used.

II. For the individual jobs A, B and C. **[6+4]**

Answer:

I. Machine hour rate for the month when the computer was used and when the computer was not used

Total machine hours without the use of computer		1,500
Total machine hours with the use of computer		2,000
Total machine hours		3,500
Total overheads of the machine per month		
Rent (₹17,500 ÷ 3)		₹5,833.33
Depreciation (2,00,000 ÷ 12)		16,666.67
Indirect Charges (1,50,000 ÷ 12)		12,500.00
Total Overheard of the machine		35,000.00
Machine hour rate (overall)	₹ 35,000 ÷ 3,500 =	₹10
Computer hire charges	4,20,000 ÷ 12 =	₹35,000
Overheads for using machine without computer (1,500 hours × ₹ 10) =		₹15,000

Overheads for using machine with computer (2,000 hours × ₹10) + ₹35,000 =	₹55,000

Machine Hour Rate for the firm as a whole:
When computer was not used = ₹ 10
when computer was used (55,000 ÷ 2,000) = ₹ 27.50

II. Machine hour rate for the individual jobs

Details	Rate per hour	Job					
		A		B		C	
		Hrs.	₹	Hrs.	₹	Hrs.	₹
Without Computer	₹10.00	600	6,000	900	9,000		
With Computer	27.50	400	11,000	600	16,500	1,000	27,500
		1,000	17,000	1,500	25,500	1,000	27,500
Machine hour rate for each job		₹17.00		₹17.00		₹27.50	

2. (b) (ii) Measurement of Employee Cost (with special items)

Trial Balance as on 31.3.2012 (relevant extracts only)

Particulars	Amount (₹)	Particulars	Amount (₹)
Materials consumed	**25,00,000**		
Salaries	**15,00,000**	**Special Subsidy received from Government towards Employee salary**	**2,75,000**
Employee Training Cost	**2,00,000**	**Recoverable amount from Employee out of perquisites extended**	**35,000**
Perquisites to Employees	**4,50,000**		
Contribution to Gratuity Fund	**4,00,000**		
Lease rent for accommodation provided to employees	**3,00,000**		
Festival Bonus	**50,000**		
Unamortised amount of Employee cost related to a discontinued operation	**90,000**		

Calculate the employee cost. **[6]**

Answer:

Computation of Employee Cost

	Particulars	Amount (₹)
	Salaries	15,00,000
Add	Net Cost of Perquisites to Employees = Cost of Perquisites (-) amount recoverable from employee = 4,50,000 (-) 35,000	4,15,000
Add	Lease rent paid for accommodation provided to employee	3,00,000
Add	Festival Bonus	50,000
Add	Contribution to Gratuity Fund	4,00,000

Less	Special subsidy received from Government towards employee salary	(2,75,000)
	Employee Cost	**23,90,000**

Note:

(i) Recoverable amount from employee is excluded from the cost of perquisites.
(ii) Employee training cost is not an employee cost. It is to be treated as an Overhead, hence, not included.
(iii) Special subsidy received is to be excluded, as it reduces the cost of the employer.
(iv) Unamortized amount of employee cost related to a discontinued operation is not an includible item of cost.

2. (c)

(i) PQ Ltd. has two production shops P and R manufacturing products 'PDT' and 'RS' respectively. Staff X, Y and Z work in shop P, staff R and S work in shop R and foreman F supervises shops P and R. 'A' is the accounts assistant in the Accounts Department who does the accounting and the payment.

Salesmen M and N market products PDT and RS respectively. The company pays the staff at certain specified rates for the hours worked. The following information is given:

Sl. No.	Details	X	Y	Z	R	S	F	A	M	N
I	Total hours worked as per time sheet	1440	1440	1340	1640	1640	1600	1000	600	600
II	Overtime hours included in I				50	50	50			
III	Night Shift hours (included in I above, in addition to II)	20	20	20	150	150	170			
IV	Normal wage rate per hour (₹/hr)	40	40	40	40	40	100	80	65	75
V	Overtime allowance ₹/hr (in addition to IV)				20	20	30			
VI	Night Shift Allowance ₹/hr (in addition to IV)	30	30	30	30	30	45			
VII	Idle time during the day due to sudden unexpected overhaul (hours included in I above)	70	70	70	70	70	70			

Additional Information:

All the night shift and overtime done by X, Y, Z, R, S and F were done only in shop P due to power failure during the normal hours.

Salary of A will be in the ratio 5:3 for products PDT and RS respectively.

Present a statement showing the item-wise amounts that you would include under Direct Labour and appropriate overhead for each type of product. Comment on the treatment of the overhaul cost as per item VII above. [13]

(ii) What are defectives? How would you treat them in Cost Accounts? [3]

Answer:

2(c) (i)

Cost Component	**Product PDT**		**Product RS**	
Direct Labour				
X	1370 × 40	54,800		
Y	1370 × 40	54,800		
Z	1270 × 40	50,800		
R	200 × 40	8,000	1370 × 40	54,800
S	200 × 40	8,000	1370 × 40	54,800
Subtotal - worker hrs	4410		2740	
Subtotal - Direct Labour Cost		**176400**		**109600**
Production Overhead				
Overtime Premium				
R	50 ×20	1000		
S	50 ×20	1000		
F	50 ×30	1500		
Subtotal - worker hours	100			
Subtotal - overtime premium		3500		
Night Shift allowance				
X	20 ×30	600		
Y	20 × 30	600		
Z	20 ×30	600		
R	150 ×30	4500		
S	150 × 30	4500		
F	170 ×45	7650		
Subtotal - worker hours	360			
Sub Total- Night Shift Allowance		18,450		
Foreman's Salary 1530 ×100 = 153000	153000/(4870+2740) × 4870	97912	153000/(4870+2740)× 2740	55088
Total Worker hours supervised by F	4410 + 100 +360 = 4870		2740	
Subtotal - Production Overheads		**119862**		**55088**
Abnormal Idle Time 70 hours × 5 persons × 40 ₹ = 14000; 70 hours of F × 100 ₹/hr = 7000; Charged to Costing P and L A/c to eliminate distortion				
Administration Overheads				
A:1000 × 80	5/8 × 8000	**5000**	3/8 × 8000	**3000**
Selling Overheads				
M	600 x 65	**39,000**		
N			600 × 75	**45,000**

(ii) Defectives are items produced in a manufacturing process, but are not up to the specifications of good output. They can be reworked or sold as seconds.

Rectification costs of normal defectives are treated as part of product or process cost if identifiable with a specific product or process. If not identifiable, they are treated as manufacturing overhead.

Abnormal defectives' rectification costs are charged to the profit and loss account.

2. (d) (i) A company makes components for television sets using two service departments and two production departments. The inter-departmental relationships and overhead costs are given below.

	Percentage of Service provided to			
From:	**Maintenance**	**Scheduling**	**Moulding**	**Assembly**
Maintenance	**-**	**10 %**	**40 %**	**50 %**
Scheduling	**20 %**	**-**	**50 %**	**30 %**
Total Overhead Cost (₹)	**7,50,000**	**4,00,000**	**3,78,000**	**2,76,000**

You are required to show the amount of Scheduling Department cost and Maintenance Department cost to be allocated to the Production Department, using Simultaneous Equation Method. [6]

Answer:

Let M be the overheads of Maintenance Department
Let S be the overheads of Scheduling Department
M= 7,50,000 + 0.2S……(i)
S = 4,00,000 + 0.1M……..(ii)
By solving equation we get,

S = 4,84,694 and

M = 8,46,939

Allocation of Overheads:

Departments	Service		Production	
	Maintenance	Scheduling	Moulding	Assembly
Total Overheads (₹)	7,50,000	4,00,000	3,78,000	2,76,000
Maintenance (₹)	8,46,939	84,694	3,38,775	4,23,470
Scheduling (₹)	96,939	4,84,694	2,42,347	1,45,408
			9,59,122	8,44,878

2.(d) (ii) The Standard labour time required for the production of a certain component has been fixed as 4 hours. An incentive scheme was introduced recently to raise labour productivity. The relevant details of the scheme are as follows:

Efficiency	**Incentive as a percentage of Basic Wage**
Below 100%	**No incentive**
100 % (i.e. 4 hours / unit)	**10%**
Above 100%	**1% additional incentive for every 1% increase in efficiency above 100%, fractions excluded**

Four Workers A, B, C and D produced 16, 12, 14 and 10 units respectively in a particular week of 48 hours. The basic wages of all workers is ₹ 15 per hour.
Calculate the efficiency, incentive bonus, total earnings and labour cost per unit in respect of each of the four workers. [2+2+2+2=8]

Answer:

Calculation of Efficiency and Incentive Bonus					
Worker	No of Units	Standard Time (ST)	Actual Time (AT)	Total Work Done*	Incentive in %
A	16	64	48	133	(10+33) = 43
B	12	48	48	100	10

C	14	56	48	116	(10+16) = 26
D	10	40	48	83	-

*Total work done = $\frac{ST}{AT} \times 100$

Computation of Total earnings per worker and Labour cost per unit of component						
Worker	Basic Wages* (₹)	Incentives		Total Earnings	No. of units Produced	Labour Cost per unit
		%	Amount			
A	720.00	43	309.60	1029.60	16	64.35
B	720.00	10	72.00	792.00	12	66.00
C	720.00	26	187.20	907.20	14	64.80
D	720.00	-	-	720.00	10	72

*Basic Wages: 48 Hours × ₹ 15 = ₹ 720

(ii) List out duties of Store Keeper. [2]

Answer:

The duties of store keeper are as follows: -

(a) To exercise general control over all activities in store department.
(b) To ensure safe storage of the materials.
(c) To maintain proper records.
(d) To issue materials only in required quantities against authorized requisition documents.

3. (Answer any two questions) [2×16=32]

(a) (i) How does financial leverage increase the potential reward to the shareholders? [6]

Answer:

Financial leverage is based on the assumption that firm is to earn more on the assets that acquired by the use of Funds on which a Fixed Rate of interest/dividend is to be paid. Financial leverage can be calculated as follows:

Financial leverage = EBIT/EBT

The Financial leverage increase the reward to the shareholders, as by increasing the debt, the organization enjoys the tax benefit as the interest on the debt capital is chargeable to the profit, thus reducing the tax burden. Again the Profit Before Tax (PBT) will be higher with lower or nil interest on debt, leading to high incidence of Corporation tax. The Balance representing Profit After Tax (PAT) become proportionately lower when such PAT is related to the higher equity capital and lower or nil debt capital. As the shareholder's reward is the PAT earned against the volume of capital invested, the financial leverage increase the potential reward to the shareholders. Further, Increase in Equity to finance low risk activities will lead to lower return for shareholders. Companies having lower risk cash flow can therefore enhance the shareholders return by increasing the debt instead of Equity. The net operating surplus represents PAT when related to the lower level of paid up share capital shows a higher reward to the shareholder.

(ii) A hospital is considering to purchase a diagnostic machine costing ₹80,000. The projected life of the machine is 8 years and has an expected salvage value of ₹6,000 at the end of 8 years.

The annual operating cost of the machine is ₹7,500. It is expected to generate revenues of ₹40,000 per year for eight years. Presently, the hospital is outsourcing the diagnostic work and is earning commission income of ₹ 12,000 per annum; net of taxes.

Required:
Whether it would be profitable for the hospital to purchase the machine? Give your recommendation under:

I. **Net Present Value method.**
II. **Profitability Index method.**

PV factors at 10% are given below:

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
0.909	0.826	0.751	0.683	0.621	0.564	0.513	0.467

[5+2=7]

Answer:

Determination of Cash inflows

Sales Revenue	40,000
Less: Operating Cost	7,500
	32,500
Less: Depreciation (80,000 - 6,000)/8	9,250
Net Income	23,250
Tax @ 30%	6,975
Earnings after Tax (EAT)	16,275
Add: Depreciation	9,250
Cash inflow after tax per annum	25,525
Less: Loss of Commission Income	12,000
Net Cash inflow after tax per annum	13,525
In 8 th Year:	
Net Cash inflow after tax	13,525
Add: Salvage Value of Machine	6,000
Net Cash inflow in year 8	19,525

Calculation of Net Present Value (NPV)

Year	CFAT	PV Factor @ 10%	Present Value of Cash Inflows
1 to 7	13,525	4.867	65,826.18
8	19,525	0.467	9,118.18
			74,944
Less: Cash Outflows			80,000.00
NPV			(5,055.64)

$$\text{Profitability Index} = \frac{\text{Sum of discounted cash inflows}}{\text{Present value of cashs outflows}}$$

$$= \frac{74,944.36}{80,000} = 0.937$$

Advise: Since the net present value is negative and profitability index is also less than 1, therefore, the hospital should not purchase the diagnostic machine.

Note: Since the tax rate is not mentioned in the question, therefore, it is assumed to be 30 percent in the given solution.

(ii) Differentiate between merit rating and job evaluation. [3]

Answer :

Difference between Merit Rating and Job Evaluation

(i) Job Evaluation is the assessment of the relative worth of jobs within a business enterprise whereas Merit Rating is the assessment of the employers with respect of a job.

(ii) Job Evaluation helps in establishing a rational wage and salary structure. On the other hand. Merit Rating helps in fixing fair wages for each worker in terms of his competence and performance.

(iii) Job Evaluation brings uniformity in wages and salaries while Merit Rating aims at providing a fair rate of pay for different workers on the basis of their performance.

3. (b) (i) Discuss the liquidity vs. profitability issue in management of working capital. [4]

Answer:

Working capital management entails the control and monitoring of all components of working capital i.e. cash, marketable securities, debtors, creditors etc. Finance manager has to pay particular attention to the levels of current assets and their financing. To decide the level of financing of current assets, the risk return trade off must be taken into account. The level of current assets can be measured by creating a relationship between current assets and fixed assets.

A firm may follow a conservative, aggressive or moderate policy. A conservative policy means lower return and risk while an aggressive policy produces higher return and risk. The two important aims of the working capital management are profitability and solvency. A liquid firm has less risk of insolvency i.e. it will hardly experience a cash shortage or a stock out situation. However, there is a cost associated with maintaining a sound liquidity position. So, to have a higher profitability the firm may have to sacrifice solvency and maintain a relatively low level of current assets.

3. (b) (ii) List the function of SEBI. [4]

Answer:

SEBI's function includes:

(i) Promoting investors' education,

(ii) Training of intermediaries of securities markets,

(iii) Prohibiting fraudulent and unfair trade practices relating to dealings in securities,

(iv) Prohibiting insider trading in securities,

(v) Regulating substantial acquisition of shares and take-overs of companies etc.

In pursuance of its powers SEBI has formulated guidelines and regulations relating to:

(i) Merchant bankers,

(ii) Bankers to an issue,

(iii) Registrars to issue,

(iv) Share transfer agents,

(v) Debentures trustees,

(vi) Underwriters,

3. (b) (iii) The capital structure of J Ltd. is as under:

	₹
Equity shares @ ₹ 10 each	**100,00,000**
9% Preference Shares @ ₹100 each	**30,00,000**
14% Debentures @ ₹100 each	**70,00,000**
The market price of these securities are:	
Equity Shares	**35 per share**
Preference Share	**120 per share**
Debentures	**110 per debenture**

Other information are:

I. Equity shares have a floatation cost of ₹5 per share. The next year's expected dividend is ₹3 with annual growth of 5%. The company pays all earnings in the form of dividends.

II. Preference Shares are redeemable at a premium of 10%, have 2% floatation cost and 10 year maturity.

III. Debentures are redeemable at par, have 4% floatation and 10 year maturity.

IV. Corporate tax rate is 30%.

You are required to calculate the weighted average cost of capital using (i) book value weights and (ii) market value weights [8]

Answer:

Cost of capital (K_e) = D/P + G

= 3/(35 – 5) + 0.05

= 3/30 + 0.05

= 0.10 + 0.05

= 0.15 or 15%

Cost of preference capital (kp) = $\frac{9+(110-98)/10}{(110+98)/2}$

= (9+1.2)/104

= 10.2/104

= 0.098

Or 9.8%

Cost of Debt (kd) $= \frac{14(1-0.3)+\frac{(100-96)}{10}}{(100+96)/2}$

$= \frac{14x0.7+0.4}{98}$

$= \frac{9.8+0.4}{98}$

$= \frac{10.2}{98}$

= 0.1041 or 10.41%

Calculation of WACC using book value weights:

Source of Capital	Book Value (₹)	Weight (w)	Cost (k)	WACC
Equity Shares	100,00,000	0.5	0.15	0.075
9% Preference Shares	30,00,000	0.15	0.098	0.0147
14% Debentures	70,00,000	0.35	0.1041	0.0364
	200,00,000	1.00		0.1261

WACC = 0.1261 or 12.61%

Calculation of WACC using market value weights:

Source of Capital	Market Value (₹)	Weight (w)	Cost (k)	WACC
Equity Shares	350,00,000	0.756	0.15	0.1134
9% Preference Shares	36,00,000	0.078	0.098	0.0076
14% Debentures	77,00,000	0.166	0.1041	0.0173
	463,00,000	1.00		0.1383

WACC = 0.1383 or 13.83%

3. (c) (i)

Write Short note on Global Depository receipts. **[4]**

Answer:

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.

It is denominated in US dollars and represents shares issued in 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) Investors can earn fixed income by way of dividend.
(iv) GDRs can be converted into underlying shares, depository / custodian banks reducing the issue.

3. (c) (ii) The following information is available as on 31.03.2015

Current Ratio	**2.7 : 1**
Current Liabilities to Net worth	**20%**
Total Debts to Net worth	**39%**
Fixed Assets to Net worth	**85%**
Sales to Net worth	**2.4 times**
Inventory to Current Assets	**1 : 3**
Average Collection Period	**1 month**
Working capital	**₹5,10,000**

Calculate the following as on 31.03.2015:

(A) Fixed assets
(B) Inventory
(C) Debtors
(D) Cash and Bank Balance (combined figure)

(E) Net worth
(F) Long term Debts
(G) Current Liabilities
(H) Total Assets **[8]**

Answer:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = 2.7:1$$

Hence, working capital = CA– CL= 2.7-1= 1.7

$$\text{Current Assets} = \frac{\text{Working Capital}}{1.7} \times 2.7 = \frac{₹5,10,000}{1.7} \times 2.7 = ₹8,10,000$$

$$\text{Current Liabilities} = \frac{\text{Working Capital}}{1.7} \times 1 = \frac{5,10,000}{1.7} \times 1 = ₹3,00,000$$

1. Net Worth = Current Liabilities $\times \frac{100}{20} = ₹3,00,000 \times \frac{100}{20} = 15,00,000$
2. Total Debts = 39% of Net Worth of ₹15,00,000 = ₹5,85,000
   Hence, Long term Debts = Total Debts – Current Liabilities
   = 5,85,000 – 3,00,000 = ₹2,85,000
3. Fixed Assets = Net Worth ₹15,00,000 × 85% = ₹12,75,000
4. Sales = Net Worth × 2.4 = 15,00,000 × 2.4 = ₹36,00,000
5. Debtors :

   $$\text{Avg. Collection Period} = \frac{\text{Debtors}}{\text{Net Credit Sales}} \times 12 \text{ months}$$

   $$\text{Debtors} = \frac{36,00,000 \times 1}{12} = ₹3,00,000$$
6. Inventory to Current Assets = 1: 3

   Hence, Inventory = CA/3 = $\frac{₹8,10,000}{3} = ₹2,70,000$

7. Cash and Bank = CA – Inventory – Debtors
   = ₹8,10,000 – ₹2,70,000 – ₹3,00,000 = ₹2,40,000

Balance Sheet

Liabilities	Amount ₹	Assets	Amount ₹
Net worth	15,00,000	Fixed Assets	12,75,000
Long term Debts	2,85,000	Inventory	2,70,000
Current Liabilities	3,00,000	Debtors	3,00,000
		Cash & bank	2,40,000
	20,85,000		20,85,000

3. (c) (iii) X Ltd., has 8 lakhs equity shares outstanding at the beginning of the year 2003. The current market price per share is ₹120. The Board of Directors of the company is

contemplating ₹ 6.4 per share as dividend. The rate of capitalisation, appropriate to the risk-class to which the company belongs, is 9.6%:
Based on M-M Approach, calculate the market price of the share of the company, when the dividend is – (a) declared; and (b) not declared. [4]

Answer:

Modigliani and Miller (M-M) – Dividend Irrelevancy Model:

$$P_O = \frac{P_1 + D_1}{1 + K_e}$$

Where P_o = Existing market price per share i.e. ₹ 120
P_1 = Market price of share at the yearend (to be determined)
D_1 = Contemplated dividend per share i.e. ₹ 6.4
K_e = Capitalisation rate i.e. 9.6%.

(i) (a) Calculation of share price when dividend is declared:

$$P_O = \frac{P_1 + D_1}{1 + K_e}$$

$$120 = \frac{P_1 + 6.4}{1 + 0.096}$$

$120 \times 1.096 = P_1 + 6.4$
$P_1 = 120 \times 1.096 - 6.4$
$= 125.12$

(b) Calculation of share price when dividend is not declared:

$$P_O = \frac{P_1 + D_1}{1 + K_e}$$

$$120 = \frac{P_1 + 0}{1 + 0.096}$$

$120 \times 1.096 = P_1 + 0$
$P_1 = 131.52$