INTERMEDIATE EXAMINATION

GROUP I

(SYLLABUS 2012)

SUGGESTED ANSWERS TO QUESTIONS

DECEMBER 2017

Paper-8: COST ACCOUNTING AND FINANCIAL MANAGEMENT

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

The figures in the margin on the right side indicate full marks.

All sections are compulsory. Each section contains instructions regarding the number of questions to be answered within the section.

All working notes must form part of the answers.

Wherever necessary, candidates may make appropriate assumptions and clearly state them.

No present value factor table or other statistical table will be provided in addition to this question paper.

Section-A

***Question* 1 is compulsory. Answer *all* questions under each sub-division.**

I. (I) Answer the following questions. Each question carries two marks.2×5= 10

(i) 10000 units of material 'X' are consumed per year having per unit cost of Rs. 20. Cost of processing an order is Rs. 50 while annual interest rate is 5%. If annual carrying cost per unit of material 'X' is 15% (other than interest), Calculate the EOQ and number of orders per year.

(ii) Following information is furnished by the Dhoora Ltd:
Production and Sales are 50000 units and 42000 units respectively. Royalty paid on units produced @ Rs. 5 per unit and @ Rs. 7.50 per unit sold. Hire charges of equipment used for production on Rs. 1,80,000 and Design charges 48,000. Compute the direct expenses according to CAS-10.

(iii) A work measurement study was carried out in a firm for 10 hours. The information generated was: Units produced 350; Idle time 15%; Performance rating 120%; and Relaxation Allowance 10% of standard time. What is the standard time for each unit produced?

(iv) Axis Ltd. follows Walter's view of dividend policy. Its earnings per share isRs. 40 and face value of equity share is Rs. 100. It has a rate of return of 20% and capitalization rate is 8%. What should be the market price per share if payout ratio is zero?

(v) If current ratio is 2.4 : 1 and net working capital is Rs. 42,000, find out the value of current assets and current liabilities.

(II) State whether the following statements are *True* or *False* (Write only the question Roman numeral and whether True or False). 1× 5=5

(i) The sum of direct material, direct wages, direct expenses and manufacturing overheads is known as conversion cost.

(ii) If the Profitability Index is more than one, the project should be accepted otherwise rejected.

(iii) The permissible bank borrowings are calculated under Method- I = 0.75 (Current Assets) - Current Liabilities.

(iv) CAS -13 is related to "Pollution Control Cost".

(v) Under Halsey - Weir Plan, bonus equals to $33\frac{1}{3}$ % of wages of the time saved.

(III) Fill in the blanks (Legibly write only the Roman numeral and the Content filling the blank): 1 ×5= 5

(i) Maximum Level = (_____+Re-order Quantity) - (Minimum Consumption Rate × Minimum Re-order Period).

(ii) Generally cost of retained earnings is equal to / same as cost of _____.

(iii) According to AS-3 (Revised), interest received on investment is an element of cash flow from_____ activities.

(iv) CAS-8 deals with the principles and methods of determining the_____.

(v) The ratio of % change in one variable to the % change in some other variable is defined as _____ in the context of capital structure and finance.

(IV) Match the following (You may opt to write the Roman numeral and the matched alphabet instead of copying the contents into the answer book): 1×5=5

	Column A		Column B
(i)	Uniform Costing	(A)	Technique of Costing
(ii)	CAS-9	(B)	Letter of Credit
(iii)	Supplementary Rate	(C)	Valuation of shares
(iv)	Capital Assets Pricing Model	(D)	Over/Under Absorption of overheads
(v)	Working Capital Finance	(E)	Packing Material Cost
		(F)	System of Costing
		(G)	Market Price Per Share

Answer: 1

(i) EOQ = $\sqrt{\frac{2AO}{C}}$

Where, A = Annual Demand (10,000 units)

O = Ordering Cost (Rs. 50)

C = Carrying Cost (Rs. 20 × 20% = Rs.4)

= $\sqrt{\frac{(2\times 10{,}000\times Rs.50}{Rs.4}}$ = **500 units**

No. of Orders = Annual Consumption/ EOQ = 10,000/500 = **20 Orders**

(ii) Computation of Direct Expenses (as per CAS 10):

	Rs.
Royalty on production: 50,000 units @ Rs. 5 per unit	2,50,000
Royalty on Sales: 42,000 units @ Rs. 7.50 per unit	3,15,000
Hire Charges	1,80,000
Design Charges	48,000
Direct Expenses	7,93,000

(iii) Calculation of Standard Time for each unit:

	Minutes
Total Time = 10 × 60	600
Less: Idle Time @ 15%	90
Actual Time	510
Normal Time = 510 × 120%	612
Add: Relaxation Allowance (10% or 1/10 on Standard Time = 1/9 on Normal Time	68
Standard Time for the job	680
Therefore, Standard Time for each unit 680/350	**1.943**

OR

Alternative Presentation:

	Minutes
Time = 10 × 60	10.000
Less: Idle Time @ 15%	1.500
Actual Time	8.500
Normal Time = 8.500× 120%	10.000
Add: Relaxation Allowance (10% or 1/10 on Standard Time = 1/9 on Normal Time	11.333
Standard Time for the job (11.333 × 60)	680
Therefore, Standard Time for each unit 680/350	**1.943**

(iv) Walter's Model:

$P = \frac{D}{Ke} + \frac{r(E-D)/Ke}{Ke}$,Where

P = Market Price per Share,

D = Dividend per Share (Re. 0)

E = Earnings per Share (Rs. 40)

R = Internal Rate of Return (20%)

K_e = Cost of Capital (8%)

∴P = [(0/0.08)+[{ 0.20 (40 – 0)/0.08}]/0.08

= 0 + (8/0.08)/0.08

= 0 + 1,250 = Rs. 1,250

(v) Suppose Current Liabilities are x, then Current Assets will be 2.4x.

Current Assets – Current Liabilities = Working Capital

2.4x – x = Rs. 42,000 or 1.4x = Rs. 42,000 ∴ x = Rs. 30,000

So, Current Liabilities = Rs. 30,000

And Current Assets = Rs. 30,000 × 2.4 = **Rs. 72,000**

(II) (i) False

(ii) True

(iii) False

(iv) False

(v) True

(III) (i)Re – order Level

(ii) Equity/Equity Capital / Capital

(iii) Investing

(iv) Cost of Utilities

(v) Leverage

(IV)

	Column A		Column B
(i)	Uniform Costing	(A)	Technique of Costing
(ii)	CAS-9	(E)	Packing Material Cost
(iii)	Supplementary Rate	(D)	Over/Under Absorption of overheads
(iv)	Capital Assets Pricing Model	(C)	Valuation of Shares
(v)	Working Capital Finance	(B)	Letter of Credit

Section B

Answer *any three* questions from question numbers 2, 3, 4 and 5.
Each question carries 15 marks.

2. (a) The following are the details of receipts and issues of a material of stores in Pooja Ltd. for the month of October, 2017:

Date of Receipt October, 2017	Units	Rate per unit (Rs.)	Date of issue October, 2017	Units
4	1800	52	3	1900
8	2500	53	11	2100
16	1600	53.50	17	1700
19	1000	54	21	1600
22	900	55	24	1300
26	2000	56	28	1500

There was 2500 units in stock at 01.10.2017 which was valued at Rs. 51 per unit. Issues are to be priced on the basis weighted average method. The stock verifier of the company reported a shortage of 70 units on 15.10.2017 and 80 units on 31.10.2017. The shortage is treated as inflating the price of remaining material on account of shortage.

You are required to prepare a Stores Ledger Account. 10

(b) What are the basic rules for classification of costs and basis of classification as per CAS – 1? 5

Answer: 2

(a) Store ledger Account

For the month ending 31st Oct,2017
(Weighted average Method)

Date	Receipts			Issues			Balance		
2017	Units	Rate (Rs.)	Amount (Rs.)	Units	Rate (Rs.)	Amount (Rs.)	Units	Rate (Rs.)	Rate for further issue (Rs.)
Oct. 1	-	-	-	-	-	-	2500	127500	51
Oct. 3	-	-	-	1900	51	96900	600	30600	51
Oct. 4	1800	52	93600	-	-	-	2400	124200	124200/2400=51.75
Oct. 8	2500	53	132500	-	-	-	4900	256700	256700/4900=52.39
Oct. 11	-	-	-	2100	52.39	110019	2800	146681	52.39
Oct. 15	-	-	-	70 Short.	-	-	2730	146681	146681/2730=53.73
Oct. 16	1600	53.50	85600	-	-	-	4330	232281	232281/4330=53.64
Oct. 17	-	-	-	1700	53.64	91188	2630	141093	53.64
Oct. 19	1000	54	54000	-	-	-	3630	195093	195093/3630=53.74
Oct. 21	-	-	-	1600	53.74	85984	2030	109109	53.74
Oct. 22	900	55	49500	-	-	-	2930	158609	158609/2930=54.13
Oct. 24	-	-	-	1300	54.13	70369	1630	88240	54.13
Oct. 26	2000	56	112000	-	-	-	3630	200240	200240/3630=55.16
Oct. 28	-	-	-	1500	55.16	82740	2130	117500	55.16
Oct. 31	-	-	-	80 Short.	-	-	2050	117500	117500/2050 = 57.32

(b) Basic Rules for Classification of Costs

(i) Classification of cost is the arrangement of items of costs in logical groups having regard to their nature (subjective classification) or purpose (objective classification).

(ii) Items should be classified by one characteristic for a specific purpose without ambiguity.

(iii) Scheme of classification should be such that every item of cost can be classified.

Basis of classification

(a) Nature of expense
(b) Relation to object - traceability
(c) Functions / activities
(d) Behaviour - Fixed, Semi-variable or Variable
(e) Management decision making
(f) Production Process
(g) Time period

3. (a) PARASH LTD. Manufactures 5,000 units of a product per month. The cost of placing an order is Rs.100. The purchase price of the raw material is Rs.10 per kg. The re-order period is 4 to 8 weeks. The consumption of raw materials varies from 100 kg to 450 kg per week, the average consumption being 275 kg. per week. The carrying cost of inventory is 20% per annum. (Assume 52 weeks to a year.)
You are required to calculate:
(i) Re-order quantity

(ii) Re-order level
(iii) Maximum level
(iv) Minimum level
(v) Average stock level **(2+2+2+2+1) = 9**

(b) The standard hours of Job X is 100 hours. The job has been completed by Amar in 60 hours, Abir in 70 hours and Binu in 95 hours. The bonus system applicable to the job is as follows:

Percentage of time saved to time allowed	Bonus
Saving upto 10%	10% of time saved
From 11% to 20%	15% of time saved
From 21% to 40%	20% of time saved
From 41% to 100%	25% of time saved

The rate of pay is Re.1 per hour
***Required:*Calculate the total earnings of each worker and also the rate of earnings per hour.** **2+2+2=6**

Answer: 3
(a)

(i) Re-order Quantity (ROQ):

EOQ (Economic Order Quantity) = EOQ = $\sqrt{\frac{2AO}{C}}$,

Where, A= Annual consumption of raw material = (275 kgs×52 weeks) = 14,300 kgs.
O = Cost of placing an order = Rs. 100
C = Carrying cost per kg. per annum = $\frac{20}{100}$ × Rs. 10 = Rs. 2

$$= \sqrt{\frac{2 \times 14{,}300 \text{ kgs.} \times \text{Rs.}100}{\text{Rs.}2}} = 1{,}196 \text{ kgs.}$$

(ii) Re-order level (ROL) = Maximum usage × Maximum re-order period
= 450 kgs× 8 weeks = 3,600 kgs

(iii) Maximum level= ROL + ROQ – (Minimum usage x Minimum re-order period)
= 3,600 kgs. + 1,196kgs. – (100Kgs × 4 weeks) = 4,396kgs.

(iv) Minimum Level = ROL – (Average Rate of usage x Average re-order period)
= 3,600 kgs. - (275 kgs. × 6 weeks) = 1,950 kgs.

(v) Average stock level = ½ (Maximum level + Minimum Level)
= ½ (4,396kgs. + 1,950 Kgs.) = 3,173 kgs.

OR

$= (\text{Minimum Level} + \frac{1}{2} \times \text{ROQ})$

$= (1{,}950\ Kgs + \frac{1}{2} \times 1{,}196\ kgs)$ = 2,548 kgs.

(b) Statement showing Total Earnings and rate of Earning per hour

Particulars	Amar	Abir	Binu
A Standard hours of Job (SH)	100 hours	100 hours	1oo hours
B Actual Time taken on the Jobs (AH)	60 hours	70 hours	95 hours
C. Time Saved [A - B]	40 hours	30 hours	5 hours
D Percentage of time saved to time allowed [C× 100/A]	40%	30%	5%
E Bonus hours (Refer to Working Note)	6.5 hours	4.5 hours	0.5 hours
F Total hours to be paid [B + E]	66.5 hours	74.5 hours	95.5 hours
G Total earning @ ₹1 Per Hour	Rs.66.5	Rs. 74.5	Rs. 95.5
H. Rate of earning per hour [Total Earning/AH]	Rs. 1.1083	Rs. 1.0642	Rs. 1.0053

Working Note: *Calculation of Bonus hours as percentage of time saved:*

Amar : (10 hours × 10%) + (10 hours × 15%) + (20 hours × 20%) = 6.5 hours

Abir : (10 hours × 10%) + (10 hours × 15%) + (10 hours × 20%) = 4.5

Binu: (5 hours × 10%) = 0.5 hours

OR

Alternative Solution:

Statement showing Total Earnings and Rate of Earning per hour:

	Particulars	**Amar**	**Abir**	**Binu**
A	Standard hour of Job (SH)	100 hours	100 Hours	100 Hours
B	Actual Time taken on Jobs (AH)	60 hours	70 hours	95 hours
C	Time Saved [A-B]	40 hours	30 hours	5 hours
D	Percentage of time saved to time allowed [C × 100/A]	40%	30%	5%
E	Bonus Hours (Refer to Working Note)	8.0 hours	6.0hours	0.5 hours
F	Total hours to be paid [B+E]	68.0 hours	76.0 hours	95.5 hours
G	Total Earning @ Re. 1 per Hour	Rs. 68.00	Rs. 76.00	Rs. 95.50
H	Rate of earning per hour [Total Earning / AH] i.e. G/B	Rs. 1.1333	Rs. 1.0857	Rs. 1.0053

Working Note: Calculation of Bonus hours as per percentage of time saved:

(If slab wise not considered)

Amar: 20% of 40 hours = 8.0 hours

Abir: 20% of 30 hours = 6.0 hours

Binu:(5 hours × 10%) = 0.5 Hour

4. (a) Enumerate the disadvantages of a centralized stores system. 5

(b) List three items to be included and two items to be excluded under the CAS -10 for Direct Expenses. 5

(c) Gamma (India) Ltd. has a unit which manufactures jute bags and export in the European market. It submits the following items of cost and request you to classify these according to function and under the appropriate element of cost:

(i) Product catalogue

(ii) Nuts and Bolts

(iii) Commission on sales

(iv) Printing and stationary

(v) Secondary packing material used for export delivery. 5

Answer: 4

(a) Disadvantages of Centralized Stores System:

(i) The transportation costs of the materials may increase because the movements of the stores may be for a greater distance since the storing is centralized.
(ii) If the user departments are far away from the stores there may be delay in receipt of the stores by those departments.
(iii) Break down of inter-departmental transport system may hold up the entire process, and similarly labor problem in the centralized stores may bring the entire concern to standstill.
(iv) There is greater chance of losses through fire, burglary or some other unhappy incidents.
(v) It may not be safe to have some hazardous elements bunched together in the centralized stores.

(b) Item to be included/excluded under CAS – 10 for direct expenses:

Items to be included:

(i) Costs which are directly traceable/ identifiable with the cost object.
(ii) Expenses incurred for the use of bought in resources.
(iii)Price variance if such expenses are accounted for at standard cost.

Items to be excluded: (Write Any Two)

(i) If not traceable/identifiable should be considered as overheads.
(ii) Finance cost is not a direct expense.
(iii) Imputed cost
(iv) Recoveries, credits, subsidy, grant, incentive or any other which reduces the cost.
(v) Penalty, damages paid to statutory authorities.

(c)

Item of Cost	Functional Classification	Element of Cost
(i) Product catalogue	Selling Overhead	Material Cost
(ii) Nuts and Bolts	Production Overhead	Material Cost
(iii) Commission on Sales	Selling Overhead	Labour Cost
(iv) Printing and Stationary	Administration Overhead	Material Cost
(v) Secondary Packing Material used for export delivery	Distribution Overhead	Material Cost

5. (a) There are three production departments and two service departments in a company. The overheads of service departments are charged on percentage basis as under:

Department	Production Departments			Service Departments	
	A	B	C	P	Q
Total Overhead (Rs.)	9,000	6,000	3,000	702	900
Services provided by P	20%	40%	30%	—	10%
Services Provided by Q	40%	20%	20%	20%	—

Required: **Apportion the overhead of service departments to the production departments using Simultaneous Equation method.** **7**

(b) Your company is an export-oriented organization manufacturing internal communication equipment of a standard size. The company is to send tender price to foreign buyers of your product. As the Cost Accountant, you are required to help the management in the matter of submission and preparation of the tender. Prepare a Cost Estimate based on the following figures relating to year 2017:

Output: 20,000 units

Expenses Incurred	Rs.		Rs.
Local Raw Material Consumed	10,00,000	Excise Duty	2,00,000
Imports of Raw Material (Actual Consumption)	1,00,000	Administrative Office Expenses	2,00,000
Direct Labour in Works	10,00,000	Salary of the Managing Director	60,000
Indirect Labour in Works	2,00,000	Salary of the joint Managing Director	40,000
Storage of Raw Material and Spares	50,000	Fees of Directors	20,000
Fuel	1,50,000	Expenses on Advertising	1,60,000
Tools Consumed	20,000	Selling Expenses	1,80,000
Depreciation on Plant	1,00,000	Seles Depot Expenses	1,20,000
Salaries of Works Personnel	1,00,000	Packing and distribution	1,20,000

(i) Local raw material now cost 10% more

(ii) A profit margin of 20% on sales is kept

(iii) The Government Grants subsidy of Rs.100 Per unit on export. **8**

Answer: 5

(a)

Let 'x' be the total overhead of Service Department P and 'y' be the total overhead of Service Department Q. Then we have:

$x = 702 + 0.2\,y$

$y = 900 + 0.1x$

To solve the equations, rearrange it and multiply by 10 to eliminate decimals, we get:

$10x - 2y = 7{,}020$ ...(i)

$-x + 10y = 9{,}000$ ...(ii)

Multiplying equation (ii) by 10 and equation (i) by 1; and adding it in equation (i), we get:

$10x - 2y = 7{,}020$

$-10x + 100y = 90{,}000$

or $98y = 97{,}020$ or $y = 990$

By substituting value of y in equation (i), we get:

$10x - 2(990) = 7{,}020$ or $10x = (2 \times 990) + 7{,}020$ or $x = 900$

Apportionment of Overhead by Simultaneous Equation Method

Departments	A	B	C	P	Q
	Rs.	Rs.	Rs.	Rs.	Rs.
Overhead (Given)	9,000	6,000	3,000	702	900
Overhead of P	180	360	270	(-) 900	90
Overhead of Q	396	198	198	198	(-) 990
Total	9,576	6,558	3,468	Nil	Nil

(b) Statement of Cost (Tender Price) for the year 2017

Output: 20,000 Units

	Particular	Rs.	Rs.
	Raw Materials Consumed (10,00,000 + 10%)		11,00,000
	Import of Raw Materials		1,00,000
	Direct Labour		10,00,000
	Prime Cost		22,00,000
Add:	Factory Overhead:		
	Indirect Labour	2,00,000	
	Storage of Raw Material and Spares	50,000	
	Fuel	1,50,000	
	Tools Consumed	20,000	
	Depreciation on Plant	1,00,000	
	Excise Duty	2,00,000	
	Salary of Works Personnel Works Cost	1,00,000	8,20,000
	Works Cost		30,20,000
Add:	Office Overhead:		
	Administrative Office Expenses	2,00,000	
	Salary of Managing Director	60,000	
	Salary of Joint Managing Director	40,000	
	Fees of Directors	20,000	3,20,000
	Cost of Production		33,40,000
Add:	Selling & Distribution Overhead		
	Expenses on Advertising	1,60,000	
	Selling Expenses	1,80,000	
	Sales Depot Expenses	1,20,000	
	Packaging and Distribution	1,20,000	5,80,000
	Cost of Sales or Total Cost		39,20,000
	Profit (20% on Sales or 25% of Cost)		9,80,000
	Total Selling Price		49,00,000
	Selling Price Before Subsidy per unit (Rs. 49,00,000 ÷ 20,000 Units)		245
Less:	Subsidy		100
	Tender Price (Per unit)		145

Section C

Answer *any two* questions from question numbers 6,7 and 8.

Each question carries 15 marks

6. (a) From the information given below you are required to prepare a cash Flow Statement for the year ended 31st March, 2017:

Balance Sheets
As at 31st march, 2016 and 2017

Particulars	2017 Rs.	2016 Rs.
I. Equity And Liabilities		
(1) Shareholders' Fund		
(a) Paid up Share Capital	90,000	70,000
(b) Reserves and Surplus:		
Profit & Loss A/c	10,000	7,000
(2) Non-Current Liabilities		
Secured Loan	40,000	—
(3) Current Liabilities		
(a) Trade Payables	37,000	14,000
(b) Short-term Provision : Tax Provision	3,000	1,000
Total	1,80,000	92,000
II. Assets		
(1) Non-Current Assets		
(a) Fixed Assets		
Tangible: Plant & Machinery	92,000	50,000
(2) Current Assets		
(a) Inventory	40,000	15,000
(b) Trade Receivables	20,000	5,000
(c) Cash and Cash Equivalents	24,000	20,000
(d) Other Current Assets: Prepaid Expenses	4,000	2,000
Total	1,80,000	92,000

Profit & Loss Account
For the year ended 31st March, 2017

Particulars	Rs.	Particulars	Rs.
To Opening Inventory	15,000	By Closing Inventory	40,000
To Purchase	98,000	By Sales	1,00,000
To Gross Profit c/d	27,000		
	1,40,000		1,40,000
To General Expenses	10,000	By Gross Profit b/d	27,000
To Dep. On plant & Machinery	8,000		
To Provision for Tax	5,000		
To Net Profit c/d	4,000		
	27,000		27,000
To Dividend	1,000	By Balance b/f	7,000
To Balance c/f	10,000	By Net Profit b/d	4,000
	11,000		11,000

(b) The details of income and financial position of Morarka Ltd. are as follows:

Particulars	Amount Rs.
Sales (Net)	**1,50,000**
Less: Cost of Sales	**1,00,000**
	50,000
Less: Operating Expenses (including Rs.6,000 p.a. for Depreciation)	**40,000**
Net Profit	**10,000**
Assets:	
Cash in hand	**12,000**
Debtors	**60,000**
Stock at cost	**24,000**
Fixed Assets (net)	**1,04,000**
Total Assets	**2,00,000**
Liabilities	
Creditors	**38,000**
Debentures	**40,000**
Share Capital	**1,00,000**
Surplus	**22,000**
Total Liabilities	**2,00,000**

The Company makes all sales on credit.

Compute the following ratios:

(i) Current ratio

(ii) Liquidity ratio

(iii) Inventory Turnover

(iv) Average Collection period

(v) Operating ratio **5**

Answer: 6 (a)

Cash Flow Statement
For the year ending 31st March, 2017

(A) Cash Flows from Operating Activities :	Rs.	Rs.
Net Profit after appropriation (Rs. 10,000 – Rs. 7,000)		3,000
Adjustment for :		
Depreciation	8,000	
Provision for Tax	5,000	
Dividend	1,000	14,000
Operating Profit before working capital changes		17,000
Adjustment for :		
Increase in Debtors	(15,000)	
Increase in Inventory	(25,000)	
Increase in Prepaid Expenses	(2,000)	
Increase in Creditors	23,000	(19,000)
Cash Generated from Operations		(2,000)

Taxes Paid		(3,000)
Net Cash used in Operating Activities (A)		(5,000)
(B) Cash Flows from Investing Activities :		
Purchase of Fixed Assets	(50,000)	
Interest/Dividend Received	NIL	
Net Cash used in Investing Activities : (B)		(50,000)
(C) Cash Flows from Financing Activities :		
Issue of Share Capital	20,000	
Raising Secured Loans	40,000	
Dividend Paid	(1,000)	
Net Cash Flow from Financing Activities (C)		59,000
Net Increase in Cash (A + B + C)		4,000
Cash and Cash Equivalent at the beginning of the year		20,000
Cash and Cash equivalents at the end of the year		24,000

Note: the figures in brackets show cash outflows.

Working Notes: **Provision for Taxation Account**

Particulars	Amount in Rs.	Particulars	Amount in Rs.
To Cash (Payment of Tax)	3,000	By balance b/d	1,000
To Balance c/d	3,000	By P & L A/c	5,000
	6,000		6,000

Plant & Machinery Account

Particulars	Amount in Rs.	Particulars	Amount in Rs.
To Balance b/d	50,000	By Depreciation a/c	8,000
To Bank (Purchase of Plant being balancing fig.)	50,000	By Balance c/d	92,000
	1,00,000		1,00,000

Answer: 6 (b)

(i) $\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{96,000}{38,000} = 2.53:1 \text{ or } 2.53$

(ii) $\text{Liquidity ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}} = \frac{72,000}{38,000} = 1.89:1 \text{ or } 1.89$

(iii) $\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}^*} = \frac{1,00,000}{24,000} = 4.17 \text{ Times}$

(iv) $\text{Average Collection Period} = \frac{\text{Total Receivable}}{\text{Net Credit Sales}} \times \text{No. of Days in the year}$

$= \frac{60,000}{1,50,000} \times 365 = 146 \text{ days}$

(v) $\text{Operating Ratio} = \frac{\text{Cost of Goods Sold} + \text{Operating Expenses}}{\text{Net Sales}} \times 100$

$= \frac{1,00,000 + 40,000}{1,50,000} \times 100 = \frac{1,40,000}{1,50,000} \times 100 = 93.33\% \text{ or } .9333$

[Note: Average Collection Period = $\frac{\text{Average Debtors}}{\text{Average Sales per day}}$ is the formula. Here, two years' figures not given. Hence, Debtors treated as average Debtors.)

***Any assumption may be made.**

7. (a) The following information is available for SORTEX LTD.

Installed capacity	**4,000 units**
Actual production and sales	**75% of the capacity**
Selling price	**Rs.30 per unit**
Variable Cost	**Rs. 15 per unit**
Fixed Cost:	
Under situation I	**Rs. 15,000**
Under situation II	**Rs. 20,000**
Tax rate	**40%**

Capital Structure:

Financial plan

	A **Rs.**	**B** **Rs.**
Equity	**10,000**	**15,000**
Debt (rate of interest at 20%)	**10,000**	**5,000**
	20,000	**20,000**

Required: **Calculate the degree of operating leverage (DOL), Degree of Financial Leverage (DFL) and Degree of Combined Leverage (DCL) Under situation I and situation II and Financial Plans A and B. 8**

(b) Royal Industries Ltd. currently makes all sales on credit and offers no cash discount. It is considering a 2 per cent discount for payment within 10 days (terms offered are '2/10 net 30'). The firm's current average collection period is 30 days, sales are 10000 units, selling price is Rs. 100 per unit and variable cost per unit is Rs. 50; its existing total fixed costs are Rs. 2,00,000 which are likely to remain unchanged with production/sales volume of 12000 units.

It is expected that the offer of cash discount will result in an increase in sales to 11,000 units and the average collection period will be 20 days as a result. However, due to increased sales, increased working capital required will be for Rs.20,000 (without taking into account the effect of debtors).

The total sales on cash discount will be 50% and 20% is the required return on investment.

Required: **Advise the Company on whether the proposed cash discount should be offered to its customers.**

(Assume 360 days to a year.) 7

Answer: 7 (a)

The calculation of the degree of operating leverage, financial leverage, and combined leverage under Situations I and II and Financial Plans A and B is shown below:

	Situation I		***Situation II***	
	Financial Plan A	***Financial Plan B***	***Financial Plan A***	***Financial Plan B***
A. Sales (3,000 × Rs. 30)	90,000	90,000	90,000	90,000
B. Variable costs	45,000	45,000	45,000	45,000
C. Contribution	45,000	45,000	45,000	45,000
D. Fixed costs	15,000	15,000	20,000	20,000

E. Profit before interest and tax	30,000	30,000	25,000	25,000
F. Interest	2,000	1,000	2,000	1,000
G. Profit before tax	28,000	29,000	23,000	24,000
H. DOL =Contribution/Earning before Interest and Taxes(EBIT) (C ÷ E)	1.5	1.5	1.8	1.8
I. DFL =EBIT/Earning after Interest but before Taxes(EBT) (E ÷ G)	1.07	1.03	1.09	1.04
J. DCL =Contribution/EBT (H × I) or (C ÷ G)	1.61	1.55	1.96	1.87

Answer: 7 (b)

Incremental analysis whether cash discount should be offered

Particulars	Amount in Rs.
Incremental sales revenue (1,000 units ×Rs. 100)	1,00,000
Less:Variable Costs (1,000 units ×Rs. 50)	50,000
Incremental contribution	50,000
Add : Savings in cost due to decrease in investment in debtors (see working note 1)	3,333
Less:Cost of additional working capital required (Rs. 20,000 × 0.20)	(4,000)
Less: Cash discount (0.02 × 11,000 units × 0.5 × Rs. 100)	(11,000)
Incremental Profit	38,333

Recommendation: It is advised that the firm should offer cash discount.

Working Notes-

1. Savings due to decrease in collection period:
   Present investment in debtors (without cash discount)
   = [(10,000 × Rs. 50) + Rs. 2,00,000]/12 (360 days/30) = Rs. 58,333.
   Expected investment in debtors (with cash discount)
   = (11,000 × Rs. 50) + Rs. 2,00,000]/18 (360 days/20) = Rs. 41,667
   Decrease in investment in debtors = Rs. 58,333 – Rs. 41,667 = Rs. 16,666
   Savings in interest cost (Rs 16,666 × 0.20) = Rs. 3,333.

8. (a) ABC Limited wishes to raise additional finance of Rs.10 lakhs for meeting its investment plans. It has Rs. 2,10,000 in the form of retained earnings available for investment purposes.

The following are the further details:

(1) Debt/equity Mix	**30% / 70%**
(2) Cost of debt uptoRs.1,80,000 **Cost of debt beyond Rs. 1,80,000**	**10% (Before tax)** **16% (Before tax)**
(3) Earnings per share	**Rs. 4**
(4) Dividend payout	**50% of earnings**
(5) Expected growth rate in dividend	**10%**
(6) Current market price	**Rs.44**
(7) Tax rate	**35%**

You are required:

(a) To determine the pattern for raising the additional finance.

(b) To determine the post-tax average cost of additional debt.

(c) To determine the cost of retained earnings and cost of equity.

(d) Compute the overall weighted average after tax cost of additional finance. 8

(b) Amul Ltd. is considering two mutually exclusive proposals, X and Y.

Proposal X will require the initial cost of Rs.1,40,000 with no salvage value, and will also require an increase in the level of inventories and receivables of Rs. 60,000 over its life. The project will generate additional sales of Rs. 1,30,000 and will require cash expenses of Rs. 40,000 in each of its 5 year life. It will be depreciated on straight line method and the same is accepted for tax purposes.

Proposal Y will required an initial capital of Rs. 2,00,000 with no salvage value, and will be depreciated on straight line basis. The earnings before depreciation and taxes during its 5 year life are:

Year 1	Year 2	Year 3	Year 4	Year 5
Rs. 70,000	Rs.76,000	Rs.80,000	Rs.90,000	Rs.92,000

The Company has to pay corporate income tax at the rate of 35 per cent, and is evaluating projects with 10 per cent as the cost of capital.

***Required:*Which project is acceptable under the NPV method?**

Table showing present values of Re.1 discount rate -10% are as follows:

	End of year				
	1	2	3	4	5
PVIF (at 10%)	0.909	0.826	0.751	0.683	0.621
PVIFA (at 10%)				3.170	3.791

7

Answer: 8 (a)

(a) Pattern for raising the additional finance:

Debts 30% of Rs. 10,00,000	Rs. 3,00,000
Equity 70% of Rs.10,00,000	Rs. 7,00,000
Total	Rs.10,00,000

Financing pattern with costs:

Source	Amount in Rs.	Cost
Debts	1,80,000	10%
Debts	1,20,000	16%
Retained Earnings	2,10,000	
Equity (7,00,000 – 2,10,000)	4,90,000	
	10,00,000	

(b) Post-tax average cost of additional debt

Formula = $K_d(1-t)$, where

K_d = 1,80,000 @ 10% = 18,000 or 10% × 0.65 = (6.5 × 1,80,000)/ 3,00,000 = 3.90%

K_d = 1,20,000 @ 16% = 19,200 or 16% × 0.65 = (10.4 × 1,20,000)/3,00,000 = 4.16%

3,00,000 37,200 8.06%

OR

Cost = [(18,000+19,200)/3,00,000] X 100 = 12.4%
Post-tax average cost of debt = 12.4(1 – 0.35) = 12.4 × 0.65 = **8.06%**

(c) Cost of Retained Earnings and Cost of Equity

$K_r = K_e$

$K_e = \frac{D_1}{P_0} + g$

Here, D_1= Dividend to be paid at the end of year
and P_0 = Current market price per share

Dividend pay -out ratio = 50% of Rs. 4 = Rs. 2.00 per Share. Growth rate is 10%. Hence, at the end of the year, dividend will be = Rs. 2 + 10% = Rs. 2.20.

$K_e = \frac{2.20}{44}$ + 0.10= 0.05 + 0.10 = 0.15 = 15%

(d) Weighted average after tax cost of additional finance

Source of Finance	Amount in Rs.	Proportion (Weight)	After tax cost	Weighted Cost	Average Weighted Cost
Debts	3,00,000	30%	8.06%	0.30 × 8.06	2.418
Retained Earnings	2,10,000	21%	15.00%	0.21 × 15	3.15
Equity	4,90,000	49%	15.00%	0.49 × 15	7.35
Total	10,00,000	100%			12.918

Thus, weighted average cost is 12.918%

Answer: 8 (b)

Proposal X: cash outflow at t = 0

Amount in Rs.

Cost of new project	1,40,000
Working capital required for an increase in the level of inventories and receivables	60,000
Total	2,00,000

Cash inflow, years 1 – 4

Sales	1,30,000
Less: Cash Expenses	40,000
Earnings before taxes	90,000
Less: Depreciation (Rs. 1,40,000 ÷ 5)	28,000
Taxable income	62,000
Less: Tax @ 35%	21,700
Earnings after Taxes	40,300
Add : Depreciation	28,000
CFAT t = (1 - 4)	68,300
t = 5 (Rs.68,300 + Rs.60,000, working capital release)	1,28,300

Determination of NPV

Years	CFAT	PV factor	Total PV : Rs.
1-4	Rs. 68,300	3.170	2,16,511
5	Rs. 1,28,300	0.621	79,674
Total PV			2,96,185
Less: Cash Outflows			2,00,000
NPV			96,185

Proposal Y: Determination of NPV (Rupees in thousands)

year	**Gross earnings**	**Depreciation**	**Taxable income**	**Tax @35%**	**EAT**	**CFAT**	**PV**	**Total PV**
		(200 ÷ 5)	(Col 2 – 3)		(Col 4 – 5)	(Col 6 + 3)	factor	(Col 7 × 8)
1	2	3	4	5	6	7	8	9
1	70	40	30	10.50	19.50	59.50	0.909	54.09
2	76	40	36	12.60	23.40	63.40	0.826	52.37
3	80	40	40	14.00	26.00	66.00	0.751	49.57
4	90	40	50	17.50	32.50	72.50	0.683	49.52
5	92	40	52	18.20	33.80	73.80	0.621	45.83
Total PV								251.38
Less: Cash Outflows								200.00
NPV								51.38

Recommendation: Proposal X is acceptable under the NPV method.