

INTERMEDIATE EXAMINATION GROUP I (SYLLABUS 2012) SUGGESTED ANSWERS TO QUESTIONS JUNE 2017

Paper-8: COST ACCOUNTING AND FINANCIAL MANAGEMENT

Time Allowed : 3 Hours

Full Marks : 100

The figures on the right margin 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.

1. (I) Answer the following questions. Each question carries two marks. 2×5= 10
- (i) Daily consumption of a material is 64 to 80 units. It takes 30 to 40 days for receipt of material after initiating the order and re-order quantity is 4000 units. Calculate the maximum stock level if the re-order level is 3200 units.
 - (ii) P Ltd. issues 1000000, 12% debentures of ₹ 100 each at a premium of 20 per cent. The debentures are redeemable after the expiry of a fixed period of 10 years at 40 per cent premium. Calculate the cost of debt after tax if corporate tax rate is 30%.
 - (iii) A worker has produced 144 units in place of 120 units in 10 hours and normal wage rate is ₹ 75 per hour. Find his total earnings under Rowan Plan.
 - (iv) The risk free rate of return is 10%, market rate of return is 12.25 % and beta (β) = 1.25. Find the cost of equity using CAPM method.
 - (v) There were 5000 workers in a factory on 1st April, 2016. New entrants in service during the year 2016-17 were 250 and separations were 130. Calculate Labour Turnover Rate using Flux method.
- (II) State whether the following are True or False (Write only the question Roman numeral and whether True or False). 1×5=5
- (vi) Danger Level of inventory should be fixed below the minimum level.
 - (vii) When the output level is more than the estimated level in a given production period, there is an over absorption of overheads.
 - (viii) A firm's WIP inventory will not have any element of allocated administration overhead.
 - (ix) As per Walter's Model of Dividend Policy the firm should retain its earnings if the rate on internal retention is higher than the capitalisation rate.
 - (x) If a project's annual cash flows have positive and negative signs, there will certainly be multiple internal rates of return.

Suggested Answer_Syl12_June2017_Paper 8

(III) Fill in the blanks (Legibly write only the Roman numeral and the content filling the blank):

1×5= 5

- (xi) When raw material is accounted at standard cost, variances due to normal reasons will be treated as _____ cost (give the element of cost).
- (xii) Cost of idle time (idle hours × hourly rate) incurred by a worker directly working on a product is treated as _____ (give the element of cost).
- (xiii) Royalty payable based on the right to sell is treated as _____ (give the element of cost).
- (xiv) The discount rate used for determining NPV of a project under capital budgeting is at least the _____.
- (xv) Modigliani-Miller theory states that _____ is independent of the firm's dividend policy.

(IV) Match the following (You may opt to write the Roman numeral and the matched alphabet instead of copying the contents into the answer books):

1×5=5

(xvi)	EOQ	A	Direct Labour
(xvii)	Sunk Cost	B	Inventory management
(xviii)	Direct worker's contribution to PF	C	Ignores value of money
(xix)	Profitability Index	D	Measures the profitability of an investment proposal
(xx)	Market price per share at the end of year 1 is	E	Excluded from Cost
		F	Cost of alternative resources
		G	Minimum ordering cost
		H	Managerial decision making
		I	Ignores project life
		J	Dividend at year 2 end / (K _e - g)
		K	Dividend at year 1 end / (K _e - g)

Answer:

1. (I) (i) Maximum Stock level = (Re-order level + Re-order quantity) – (Minimum rate of consumption × minimum Re – order period)
- $$= (3,200 + 4,000) - (64 \times 30)$$
- $$= 7,200 - 1,920$$
- $$= 5,280 \text{ units}$$

(ii)
$$K_d = \frac{I(1-t) + \frac{(RV - NP)}{N}}{\left(\frac{RV + NP}{2}\right)} = \frac{12(1 - 0.3) + \left(\frac{140 - 120}{10}\right)}{\frac{140 + 120}{2}}$$

$$= (8.4 + 2) / 130 = 0.08 \text{ OR } 8\%$$

- (iii) Time Allowed = $10/120 \times 144 = 12$ hours
 Time Saved = $12 - 10 = 2$ hours

Under Rowan Plan:	₹
Normal wages = 10 hours × ₹75	750
Add: Bonus = $\frac{2 \times 10}{12} \times 75$	125
Total Earnings	875

Suggested Answer_Syl12_June2017_Paper 8

Alternative Presentation:

$$\begin{aligned} \text{Total Earnings} &= H \times R + \left[\frac{(S - H)}{S} \right] \times 10 \times 75 \\ &= ₹ (10 \times 75) + \left[\frac{(12 - 10)}{12} \right] \times 10 \times 75 \\ &= ₹ 750 + ₹ 125 = ₹ 875 \end{aligned}$$

(iv) $k_e = R_f + \beta (R_m - R_f) = 10\% + 1.25 \times 2.25\% = 10 + 2.813 = 12.813\%$

(v) Labour Turnover rate (Flux method)

$$\begin{aligned} &= \frac{1}{2} \times \frac{\text{No. of new entrants} + \text{No. of leavers}}{\text{Average No. of workers during the year}} \times 100 \\ &= \frac{1}{2} \times \frac{250 + 130}{5060} \times 100 \\ &= \frac{1}{2} \times \frac{380}{5060} \times 100 \\ &= 3.75\% \end{aligned}$$

Note: - Average No. of Workers = $\frac{5000 + (5000 + 250 - 130)}{2} = \frac{5000 + 5120}{2} = 5060$

- (II) (vi) False
 (vii) True
 (viii) True
 (ix) True
 (x) True

- (III) (xi) Direct Material Cost
 (xii) Factory Overheads or Works Overheads
 (xiii) Selling Overheads or Selling and Distribution Overheads
 (xiv) Cost of Capital
 (xv) Value of the firm

(IV)

(xvi)	EOQ	B	Inventory Management
(xvii)	Sunk Cost	H	Managerial Decision Making
(xviii)	Direct worker's contribution to PF	E	Excluded from Cost
(xix)	Profitability Index	I	Ignores Project Life.
(xx)	Market price per share at the end of year 1 is	J	Dividend at year 2 end/(Ke-g)

[Section B]

Answer any three questions from question numbers 2, 3, 4 and 5.

Each question carries 15 marks.

2. (a) The following information is provided by GA Ltd. for the year ended 31st March, 2017:

Production and Sales: 20,000 units

	₹
Direct Material	30,00,000
Direct Wages	22,50,000
Factory Overhead	20,62,500
Office and Administration Overheads	8,50,000
Selling and Distribution Overheads	2,50,000
Sales	1,00,95,000

Suggested Answer_Syl12_June2017_Paper 8

The following estimates have been made for the year 2017 – 18:

- (i) Production and sales will be 30,000 units.
- (ii) Material prices per unit will increase by 25% but due to economy in consumption there will be a saving of 12% on the revised value.
- (iii) The wage rate per unit will increase by 20%.
- (iv) Factory overheads of ₹ 7,50,000 are fixed. The remaining factory overheads will be in the same proportion to materials consumed plus wages as in last year.
- (v) The Office and Administrative overheads will increase by 20%.
- (vi) Selling and Distribution overheads per unit will be reduced by 20%.
- (vii) Percentage of profit on cost desired = 5% plus rate of profit on cost in the last year.

You are required to prepare a statement showing total cost and profit both in value (to the nearest rupee) and on per unit basis for the year 2017-18. Present costs element wise and with sub totals usually exhibited in a cost sheet 10

(b) P. Ltd. products P – I and P – II. The following information is furnished:

Particulars	Product P-I	Product P-II
Opening Stock (Tonnes)	25,000	21,000
Sales (Tonnes)	4,15,000	3,10,000
Closing Stock (Tonnes)	32,000	28,000
Machine Hours Utilised (Hours)	10,000	6,000
Design Charges (₹)	10,80,000	6,50,000
Software development charges (₹)	16,50,000	9,00,000

Royalty is paid on units produced @ ₹ 20 per tonne for both the products. Wages are paid to machine operators @ ₹ 75 per machine hour. Hire charges of equipment used in manufacturing process of only product P-II ₹ 6,15,000.

You are required to calculate the direct expenses of PI and PII as per CAS. 5

Answer:

2. (a) Statement of Cost and Profit for the year ended 31st March, 2018
Output and Sales: 30,000 units

Particulars	Total (₹)	Per unit(₹)
Direct Materials	49,50,000	165 ¹
Direct Wages	40,50,000	135 ²
Prime Cost	90,00,000	300
Factory Overheads(7,50,000+22,50,000 ³)	30,00,000	100
Works Cost	1,20,00,000	400
Office and Administrative Overheads	10,20,000 ⁴	34
Cost of Production	1,30,20,000	434
Selling and Distribution Overheads	3,00,000	10 ⁵
Cost of Sales	1,33,20,000	444
Profit	33,30,000	111
Sales	1,66,50,000	555

Working Notes: Calculations for the year 2017-18:

1. Direct Materials Cost per unit= 150 + 25% of 150 = 187.5 - 12% of 187.50 = ₹165
2. Direct Wages per unit = 112.50 + 20% of 112.50= ₹ 135

Suggested Answer_Syl12_June2017_Paper 8

3. Factory Overheads: Fixed ₹ 7,50,000 and Variable 20,62,500 - 7,50,000 = (13,12,500/52,50,000) × 90,00,000 = ₹ 22,50,000
4. Office and Administrative Overheads = 8,50,000 + 20% of 8,50,000 = ₹10,20,000
5. Selling and Distribution Overhead per unit = 12.50 - 20% of 12.50 = ₹10
6. Profit percentage on cost for the year 2016-17 = (16,82,500/ 84,12,500) ×100 = 20%
Desired Profit % for 2017-18 = 20 +5 = 25% on Cost.

(b) Computation of Units produced

Particulars	P I	P II
Sales (Tonnes)	4,15,000	3,10,000
Add Closing Stock (Tonnes)	32,000	28,000
Less Opening Stock (Tonnes)	25,000	21,000
Units produced (Tonnes)	4,22,000	3,17,000

Computation of Direct Expenses as per CAS 10

Particulars	P I (₹)	P II (₹)
Royalty paid on Units produced	84,40,000	63,40,000
Add, Hire charges of Equipment used in PII	0	6,15,000
Add, Design Charges	10,80,000	6,50,000
Add, Software development charges	16,50,000	9,00,000
Direct Expenses	1,11,70,000	85,05,000

Note: Machine Operators Wages will be included in Direct Wages.

3. (a) The following information given:

Workers engaged	: WX and WY
Standard time allowed for Job	: 40 hours to each
Actual time taken	: 32 hours by WX and 30 hours by WY
Wages rate	: Same for both
Wages payment system	: Halsey 50% plan for WX and Rowan plan for WY
Factory overhead recovered	: @ ₹180 per hour for time taken in both cases.
Factory cost for each of the worker	: ₹ 62,400

Calculate the hourly wages rate and cost of material used.

Assume zero direct expenses.

7

(b) A company having three production cost centres A, B and C and two service cost centres X and Y reports the following data on overhead allocation costs for a certain period:

Cost Centres	Overhead Costs (₹)	Estimates of benefits received from Service cost centres (%)	
		X	Y
A	80,000	20	20
B	40,000	30	25
C	20,000	40	50
X	20,000	-	5
Y	10,000	10	-

Determine the total overhead costs of C after apportioning the service centre costs using (i) Simultaneous Equations Method and (ii) Repeated Distribution method. Comment on your findings. Explain the concept. (Present your calculations to the nearest rupee).

8

Suggested Answer_Syl12_June2017_Paper 8

Answer:

3. (a) Factory Cost = Direct Material Cost + Direct Labour Cost + Factory Overhead
Let the Material Cost be 'x' and Labour Rate per hour be 'y'

Thus, the material cost for each of WX & WY = x

Labour cost for WX (under Halsey 50% plan) =

$$\text{Normal wages} + \text{Bonus} = 32y + (40 - 32) \times y \times \frac{50}{100} = 32y + 4y = 36y$$

Labour Cost for WY (under Rowan plan) =

$$\text{Normal wages} : 30y + \text{bonus} = 30y + \left[\frac{30 \times (40 - 30)}{40} \right] \times y = 30y + 7.5y = 37.5y$$

Factory Overhead for WX = $32 \times 180 = 5,760$

Factory Overhead for WY = $30 \times 180 = 5,400$

Factory Cost:

$$\text{For WX} = x + 36y + 5,760 = 62,400 \quad \text{or} \quad x + 36y = 56,640$$

$$\text{For WY} = x + 37.5y + 5,400 = 62,400 \quad \text{or} \quad x + 37.5y = 57,000$$

On Subtracting equation (ii) from (i), we get $-1.5y = -360$

Or $y = 240$

$$x + 36 \times 240 = 56,640 \quad \text{Or} \quad x = ₹ 56,640 - 8,640 = ₹ 48,000$$

Therefore, Material Cost (x) = ₹ 48,000 and

Wages Rate per hour (y) = ₹ 240 per hour.

- (b) (i) Simultaneous Equation Method

$$\text{Equations : } X = ₹ [20,000 + 0.05y]$$

$$Y = ₹ [10,000 + 0.1x]$$

Solving, we get : $Y = ₹ 12,060$

$$X = ₹ [20,000 + .05(12,060)]$$

$$= ₹ [20,000 + 603] = ₹ 20,603$$

Total overhead cost of C = ₹ [20,000 + 40%X + 50% Y]

$$= ₹ [20,000 + 0.4 \times 20,603 + 0.5 \times 12,060]$$

$$= ₹ [20,000 + 8,241 + 6,030]$$

$$= ₹ 34,271.$$

Repeated Distribution Method:

	A	B	C	X	Y
Overheads →	80,000	40,000	20,000	20,000	10,000
Service X			8,000	-20,000	2,000
Service Y			6,000	600	-12,000
Service X			240	-600	60
Service Y			30	3	-60
Service X			1	-3	0
Total Cost of Overhead			34,271		

Value of overhead of C under repeated distribution method is ₹ 34,271

Suggested Answer_Syl12_June2017_Paper 8

Note: The repeated distribution method and the simultaneous equation method result in the same value of overhead apportionment only subject to round off difference. By the simultaneous equation method, we avoid the repeated iterations. We get the overhead amount directly by solving the equations. They are not essentially two different methods, but are rather two ways of calculating the apportionment on the same basis.

4. (a) Two quotations have been shortlisted in a material procurement process. Supplier A charges ₹ 2.3 per unit and Supplier B charges ₹ 2.10 per unit plus ₹ 4,000 fixed charges irrespective of the order quantity.
- (i) Compute the order quantity at which the purchase value will be the same for both the suppliers.
- (ii) If the order quantity is 15,000 units, which supplier should be chosen? 4
- (b) State three characteristics of "imputed cost". Give an example. 4
- (c) What are the adjustments made to the installed capacity to arrive at the practical capacity? 4
- (d) State the uses of CAS 5 in determining the average cost of transportation of materials. 3

Answer:

4. (a) Supplier A = ₹ 2.30 per unit
Supplier B = ₹ 2.10 per unit + ₹4000/- fixed charge
Difference in price = ₹ 0.20 per unit

Let the quantity be "X", where purchase value is same for both suppliers:

$$2.30 'x' = 2.10x + 4,000$$

Solving the equation, we get 'x' = 20,000 Units

Or

In order to recover the fixed charges of supplier B, the order quantity should be 20,000 units (i.e., ₹ 4000/0.20). At the quantity of 20,000 units, purchase cost will be the same in both the cases as detailed below:

A ₹ 2.30 per unit (2.30 × 20,000 = ₹ 46,000)

B ₹ 2.10 per unit (20,000 × 2.10) + (₹ 4,000 fixed charges) = ₹ 46,000

As seen from the above, at the quantity of 20,000 units, purchase cost will be the same in both the cases. If it is for less than 20,000 units, supplier A should be selected.

- (ii) For an order of 15,000 units

A 15,000 × 2.30 = ₹ 34,500

B (15,000 × 2.10 + ₹ 4,000) = ₹ 35,500 that is ₹ (31,500 + 4,000)

Hence, A should be selected in order to place an order for 15,000 units

Note: If the order is for more than 20,000 units, supplier B should be selected, as the fixed charges of ₹ 4,000 are same irrespective of the units ordered.

- (b) Imputed costs are:

(i) Notional costs - they do not involve cash outlay

(ii) Used only for decision making process, similar to opportunity cost.

(iii) They are a classification of costs for managerial decision making.

Example: Interest on funds generated internally, payment for which is not actually made.

Suggested Answer_Syl12_June2017_Paper 8

- (c) (i) Available production hours after considering normal idle time, normal shut down and holidays
 (ii) Normal time loss in batch change over, break downs, repairs, etc
 (iii) Loss in efficiency due to ageing of machinery/equipment
 (iv) Number of shifts
- (d) CAS 5 should be applied for calculation of cost of transportation required under any statute or regulations or for any other purpose. For example, this standard can be used for:
- (i) Determination of average transportation cost for claiming the deduction for arriving at the assessable value of excisable Goods
 (ii) Insurance Claim Valuation
 (iii) Working out Claim for Freight Subsidy (under Fertilizer Industry Coordination Committee)
 (iv) Administered price mechanism of Freight Cost element
 (v) Determination of Inward Freight Costs included or to be included in the cost of purchases attributable to the acquisition
 (vi) Computation of Freight included in the Value of Inventory for Accounting on Inventory or Valuation of Stock hypothecated with Banks/ Financial Institution/s....etc.

5. (a) The following information relates to the activity of a production department of M Limited for the month of April, 2017:

(i)	Material Costs	₹15,00,000
(ii)	Employee Costs	₹ 6,72,000
(iii)	Direct Expenses	₹ 42,000
(iv)	Other Fixed Costs	₹ 8,40,000
(v)	Direct Labour hours	21,000 hours
(vi)	Hours of machinery operation	4,000 hours

You are required to prepare a statement showing the break-up of element wise cost (as per CAS) of the items given above for the entire department and for the order detailed below based on the following additional information:

(iv) above consists of 80% as machine related expenses and 10% as administration and 10% as marketing expenses.

On one order carried out in the department during April, 2017 the relevant data were:

Material used: 10% of total material; labour hours worked 163 hours; Machine hours: 51 hours.

Use (A) machine hour rate of overhead absorption (B) Direct labour hour rate of overhead absorption for factory overheads and prime cost basis for other overheads and determine the cost of the order under A and B. 6

- (b) Group the following items as per the CAS applicable under the most appropriate element of cost or as specific exclusions. Find the total cost of direct materials. The information pertains to a company manufacturing processed foods.

Sl. No.	Item Description	Amount (₹)
(i)	Material purchased: Flour at invoice price	50,000
(ii)	Transport Cost of flour to the factory	2,000
(iii)	Penalty paid to Transport Authority	700
(iv)	Free Samples	950

Suggested Answer_Syl12_June2017_Paper 8

(v)	Materials used for self-made primary packing material	5,000
(vi)	Direct Labour used on the above packing material	3,000
(vii)	Factory Overheads on the above packing material	1,000
(viii)	Invoice price of dyes purchased for the production shop	1,100
(ix)	Inward Transport cost of Dye	200
(x)	Salary paid to machine worker	2,100
(xi)	Salary paid to billing officer who raises invoices	2,200
(xii)	Wages paid to a machine worker during idle time	300
(xiii)	Price List/Catalogue cost	5,400
(xiv)	Cost of cartons used to pack the packets to dispatch to retail outlets	3,300
(xv)	Direct worker's contribution of Employees' Provident Fund	225
(xvi)	Taste stimulant and preservative added during the process (approximate value; quantity not measurable during each process)	900

(You need not copy the item description into the answer book. You may indicate under each element, the Roman numeral and the corresponding amount) 9

Answer:

5. (a) Element wise Cost Statement for entire Department

Particulars	₹
Direct Material	15,00,000
Direct Labour	6,72,000
Direct Expenses	42,000
Prime Cost	22,14,000
Production Overheads	6,72,000
Factory Cost	28,86,000
Administration Overheads	84,000
Cost of Production	29,70,000
Selling and Distribution Overheads	84,000
Cost of Sales	30,54,000

For the order:

Absorption of Overheads	Machine Hour Basis (₹)	Labour Hour Basis (₹)
Direct Material	1,50,000	1,50,000
Direct Labour (163/21000) × 6,72,000	5,216	5,216
Direct Expense (10%)	4,200	4,200
Prime Cost	1,59,416	1,59,416
Production Overheads: (6,72,000/4,000) × 51 (6,72,000/21000) × 163	8,568	5,216
Factory Cost	1,67,984	1,64,632
Administration Overheads	1,071*	652**
Cost of Production	1,69,055	1,65,284
Selling and Distribution Overheads	1,071*	652**
Cost of Sales	1,70,126	1,65,936

* (84,000/4,000) × 51 = ₹ 1,071

** (84,000/21,000) × 163 = ₹ 652

Suggested Answer_Syl12_June2017_Paper 8

Alternative:

Question states: "use (A) Machine Hour Rate of Overhead absorption (B) Direct Labour Rate for Overhead absorption for Factory Overhead and Prime Cost basis for other Overheads and determine the Cost of Order under A and B."

Other Overheads pertain to Administrative Overheads and Selling & Distribution Overheads.

The Prime Cost in both the cases is ₹ 1,59,416 and respective Overheads are also same ₹ 84,000.

The Percentage of this Overhead to Prime Cost is approximately 3.794.

Therefore, in both the cases, both above said Overheads would amount to ₹ 6,048 approximately and Cost of Sales would be ₹ 1,80,080 and ₹ 1,76,728 respectively.

(b)

Details	Amount in ₹					
	Direct Material (CAS 6)	Direct Labour (CAS 7)	Direct Expenses (CAS 10)	Production Overheads (CAS 3)	Administration Overheads (CAS 11)	Selling and Distribution Overheads (CAS 15)
(i) Flour at Invoice Price-Material	50,000					
(ii) Inward Transport Cost of Flour	2,000					
(v) Primary Packing Material	5,000					
(vi) Direct Labour for Packing Material	3,000					
(vii) Factory O/Hs on packing material	1,000					
(viii) Dyes for Production Shop				1,100		
(ix) Inward Transport Cost- Dyes				200		
(x) Salary to Machine Worker		2,100				
(xii) Idle Time				300		
(xi) Salary to Billing Officer						2,200
(xiii) Price Catalogue						5,400
(xiv) Cost of cartons for distribution						3,300
(xvi) Taste Stimulant and Preservative				900*		
(iv) Free Samples						950
Total cost of Direct Material	61,000					

Suggested Answer_Syl12_June2017_Paper 8

- If measurable, it is Direct Expense. Since not measurable and exactly valued, treated as Factory/Production overhead. (Cost of some direct expense not economically/feasibly traced is an Overhead.)
- (xv) Direct Worker's Contribution to P.F. is not cost to Company.
- (iii) Penalty paid to Transport Authority is not part of a Product Cost.

Section C

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

Each question carries 15 marks

6. (a) Using the following data, find as many items as possible to prepare the balance Sheet as at the end of the year:

Gross profits	₹ 5,40,000
Shareholders Funds	₹ 40,00,000
Gross Profit Margin	30%
Credit Sales to Total Sales	80%
Total Assets Turnover Ratio (based on Sales Value)	0.3 times
Inventory Turnover Ratio (Based on cost)	4 times
Average collection period (360 days in a year)	20 days
Current ratio	1.8
Long-term Debt to Equity	40%

10

- (b) Identify whether the following items are inflows or outflows and place them under appropriate categories in the cash flow statement under AS-3:

5

Item Description	Inflow	Outflow	Category
Normal income tax refund			
Proceeds of a share issue			
Interest received by a financial enterprise			
Decrease in debtors			
Dividend received by a manufacturing company			

Answer:

6. (a) Working notes:

1. Total Sales: GP Margin GP Sales	= 30% = ₹ 5,40,000 = 5,40,000/30% = ₹18,00,000
2. Credit Sales: Credit sales	= 80% of total sales = 18,00,000 X 80% = ₹14,40,000
3. Total Assets: Total Assets Turnover Total Assets	= Sales/ Total Assets =0.3times = 18,00,000/0.3 = ₹60,00,000
4. Inventory: Inventory Turnover inventory	= Cost of Goods Sold / Inventory X 100 = 18,00,000 – 5,40,000 / Inventory = 12,60,000 / 4 = ₹3,15,000

Suggested Answer_Syl12_June2017_Paper 8

5. Debtors: Debtors	= Credit Sales X 20 days / 360 days = 14,40,000 X 20/360 days = ₹ 80,000
6. Long Term Debt Total Assets Total of Balance Sheet Now, Long Term Debt Long Term Debt Current Liabilities	= 60,00,000 = 60,00,000 = Long Term Debt / Equity = 40% = 40% of Equity = 40,00,000 X 40% = ₹ 16,00,000 = 60,00,000 (Total Assets) – 40,00,000 (Equity) – 16,00,000 (Long Term Debt) = ₹ 4,00,000
7. Cash and Bank: Current ratio 1.8 1.8 7,20,000 Cash and Bank	= Current Assets / Current Liabilities = Debtors + Inventory + Cash and Bank = 80,000 + 3,15,000 + Cash and Bank / 4,00,000 = 3,95,000 + Cash and Bank = ₹ 3,25,000
8. Fixed Assets Total Assets – Current Assets	= ₹ 60,00,000 – (3,15,000 + 80,000 + 3,25,000) = ₹ 52,80,000

Balance Sheet as at the end of Year ending -----

	Schedule No.	₹ Current Year	₹ Previous Year
Capital and Liabilities			
Share holders funds		40,00,000	
Long term liabilities		16,00,000	
Current liabilities		4,00,000	
Total		60,00,000	
Assets			
Cash		3,25,000	
Debtors		80,000	
Fixed Assets		52,80,000	
Inventory		3,15,000	
Total		60,00,000	

(b)

Item Description	Inflow	Outflow	Category
Normal income tax refund	√		Operating activity
Proceeds of a share issue	√		Financing activity
Interest received by a financial enterprise	√		Operating activity
Decrease in debtors	√		Operating activity
Dividend received by a manufacturing company	√		Financing activity

7. (a) The following data is provided by S Limited.

Sales ₹ 40,00,000; Variable Cost is 60% of Sales; Fixed Cost ₹10,00,000; Interest on Borrowings ₹ 1,50,000 in addition to the fixed costs.

Suggested Answer_Syl12_June2017_Paper 8

Using the concept of leverage, answer the following:

- (i) By what percentage will the taxable income increase if EBIT increases by 6%?
 (ii) By what percentage will EBIT increase if there is 10% increase in sales?
 (iii) By what percentage will the taxable income increase if the sales increase by 6%?
 Verify your results. 8

(b) A firm is considering pushing up its sales by extending credit facilities to any one of the following categories of customers: (i) Customers with a 10% risk of non-payment, and (ii) Customers with a 25% risk of non-payment. The incremental sales expected in category (i) is ₹ 2,40,000 and in category (ii) is ₹ 6,50,000. The cost of production and selling costs are 60% of sales while the collection costs amount to 5% of sales in case of category (i) and 10% of sales in case of category (ii).

You are required to advise the firm about extending credit facilities to each of the above categories of customers. (Use sale value for bad debts). 7

Answer:

7. (a) Income statement of the company

	₹
Sales	40,00,000
Less : Variable Cost @ 60%	24,00,000
Contribution	16,00,000
Less: Fixed Cost	10,00,000
EBIT	6,00,000
Less : Interest	1,50,000
Profit before tax	4,50,000

(i) Degree of Financial Leverage :

$$DFL = \text{EBIT} / \text{Profit before Tax} = 6,00,000 / 4,50,000 = 1.3333$$

If EBIT increase by 6%, the taxable income will increase by $1.3333 \times 6 = 7.9998\%$ or 8% and it may be verified as follows:

Amount in ₹	
EBIT (after 6% increase)	6,36,000
Less: Interest	1,50,000
Profit before Tax	4,86,000

Increase in taxable income is ₹ 36,000 i.e., 8% of ₹ 4,50,000

(ii) Degree of Operating Leverage:

$$DOL = \text{Contribution} / \text{EBIT} = 16,00,000 / 6,00,000 = 2.6667$$

If Sales increase by 10%, the EBIT will increase by $2.6667 \times 10 = 26.667\%$ and it may be verified as follows:

Amount in ₹	
Sales (after 10% increase)	44,00,000
Less : Variable Expenses @ 60%	26,40,000
Contribution	17,60,000
Less: Fixed Cost	10,00,000
EBIT	7,60,000

Increase in EBIT is ₹ 1,60,000 i.e., 26.667% of ₹ 6,00,000.

(iii) Degree of Combined Leverage :

$$DCL = \text{Contribution} / \text{Profit before Tax} = 16,00,000 / 4,50,000 = 3.556$$

Suggested Answer_Syl12_June2017_Paper 8

Alternatively,

$$DCL = DFL \times DOL \text{ or, } 1.3333 \times 2.6667 = 3.5555 \text{ say } 3.556$$

If sales increase by 6%, the Profit before tax will increase by $3.556 \times 6 = 21.336$ and it may be verified as follows:

	Amount in ₹	
Sales (after 6% increase)	42,40,000	1
Less: Variable Expenses @ 60%	25,44,000	
Contribution	16,96,000	
Less : Fixed Cost	10,00,000	
EBIT	6,96,000	
Less: Interest	1,50,000	
Profit before tax	5,46,000	

Increase in Profit before tax is ₹ 96,000 i.e. 21.336% of ₹ 4, 50,000

(b) Evaluation of Credit Policies

Category (i) 10% risk of non-payment

Particulars	₹	₹
Incremental sales		2,40,000
Less: Bad debts @ 10%		24,000
Sales realized		2,16,000
Less: Cost of production and selling cost (2,40,000 × 60%)	1,44,000	
Less: Collection cost (2,40,000 × 5%)	12,000	1,56,000
Incremental Profit		60,000

Category (ii) 25% risk of non - payment

Particulars	₹	₹
Incremental Sales		6,50,000
Less: Bad Debts @ 25%		1,62,500
Sales realized		4,87,500
Less: Cost of production and selling cost (650000 × 60%)	3,90,000	
Less: Collection cost (650000 × 10%)	65,000	4,55,000
Incremental Profit		32,500

Advice: Incremental profit in case of category (i) is more than as same in case of category (ii). Hence, advised to extend credit facility to category (i).

8. (a) R Ltd. Has the following book-value capital structure as on 31st March, 2017:

	(₹ In Crores)
12% Debentures of ₹ 100 each	20
10% Preference shares of ₹ 100 each	5
Equity shares of ₹ 10 each	25
Total	50

Recent market prices of the securities are:

Debentures: ₹ 115 per debenture;

Preference shares: ₹ 140 per share; and

Equity shares: ₹ 48 per share

Suggested Answer_Syl12_June2017_Paper 8

External financing opportunities are:

- (i) 12% Debentures are redeemable at par after 10 years, its flotation cost is 4% and sale price is ₹ 100.
- (ii) 10% Preference shares are redeemable at par after 10 years, its flotation cost is 5% and sale price is ₹ 100.
- (iii) Equity shares: ₹ 4 per share is flotation cost, sale price is ₹ 44.

The dividend expected on the equity share at the end of the year is ₹ 4 per share; the anticipated growth rate in dividends is 7% p.a. and the company has the practice of paying all its earnings in the form of dividend. The 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 10

(b) The following data relating to a project are provided by the Management of G Ltd:

Annual saving	₹ 4,20,000
Useful life	4 years
Profitability Index	1.04291
Internal rate of Return	14%
Salvage Value	Nil

Assume that the only outflow is at the beginning of year 1.

Find (i) Net Present Value (to the nearest rupee) and (ii) Cost of Capital (as a % up to one decimal point) 5

Table Showing Present Value of Re.1 at different discount rates: (You are required to use PV factors only up to three decimals as shown below)

Rate End of Year	14%	13%	12%	11%
1	0.877	0.885	0.893	0.901
2	0.769	0.783	0.797	0.812
3	0.675	0.693	0.712	0.731
4	0.592	0.613	0.636	0.659
Total	2.913	2.974	3.038	3.103

Answer:

8. (a) Working Notes:

Calculation of specific Cost of Capital

(1) Cost of Debt

$$\begin{aligned}
 K_d &= \{ [(1-t) + (RV - NS) / N] / (RV + NS) / 2 \\
 &= \{ [12 (1-0.3) + (100-96) / 10] / (100+96) / 2 \\
 &= (8.4 + 0.4) / 98 \\
 &= 0.0898 \text{ or } 8.98\%
 \end{aligned}$$

(2) Cost of Preference Capital

$$\begin{aligned}
 K_p &= \{ PD + (RV - NS) / N \} / (RV + NS) / 2 \\
 &= \{ 10 + (100 - 95) / 10 \} / (100 + 95) / 2 \\
 &= \{ 10 + 0.5 \} / 97.5 \\
 &= 10.5 / 97.5 \\
 &= 0.107692 \text{ or } 10.77\%
 \end{aligned}$$

Suggested Answer_Syl12_June2017_Paper 8

(3) Cost of Equity

$$\begin{aligned}K_e &= D / NP + G \\ &= 4 / 40 + 7\% \\ &= 0.10 + 0.07 \\ &= 0.17 \text{ or } 17\%\end{aligned}$$

Computation of Weighted Average Cost of Capital (WACC)

(i) Based on Book Value Weights

Source	₹ (in Crores)	Weight	Cost of Capital (%)	WACC (K _o)
12% Debentures	20	0.40	8.98	3.592
10% Preference Shares	5	0.10	10.77	1.077
Equity Shares	25	0.500	17	8.5000
Total	50	1.000		13.169

(ii) Based on Market Value Weight

Source	₹ (in Crores)	Weight	Cost of Capital (%)	WACC (K _o)
12% Debentures	23	0.1533	8.98	1.3766
10% Preference Shares	7	0.0467	10.77	0.5030
Equity Shares	120	0.8000	17	13.6000
Total	150	1.000		15.4796

(b) PV of cash inflows at 14% = Cost of Project

$$\text{Cost of Project} = \text{PV of ₹ 4,20,000 for 4 years at 14\%} = 4,20,000 \times 2.913 = ₹12,23,460$$

(i) NPV:

$$PI = \text{PV of Cash Inflows} / \text{PV of Initial Cash Outflow} = 1.04291$$

$$\text{Hence, PV of Cash Inflows} = \text{Initial Cash Outflow (Cost of Project)} ₹ 12, 23,460 \times 1.04291$$

$$= ₹ 12,75,959$$

$$\text{NPV} = \text{PVCIF} - \text{Cash Outflow} = 12, 75,959 - 12, 23,460 = ₹ 52,499$$

(ii) Cost of Capital:

$$\text{PV of Cash Inflows at cost of Capital}(r) \text{ for 4 years} = ₹ 12, 75,959$$

$$\text{PV Factor for 4 years} = 12, 75,959 / 4, 20,000 = 3.038 \text{ which is at } 12\%.$$

$$\text{Hence, Cost of Capital} = 12\%.$$