

**Paper 10 – Cost & Management Accounting and
Financial Management**

MTP_Final_Syllabus-2016_December2018_Set -1

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Full Marks : 100

Time allowed: 3 hours

Part A : (Cost and Management Accounting)

Section - I

1. Answer the following questions:

(a) Choose the correct answer from the given four alternatives:

[1×6=6]

- (i) Reporting under marginal costing is accomplished by:
(A) eliminating the WIP inventory account
(B) including only variable costs in income statement
(C) matching variable costs against revenue and treating fixed costs as period costs
(D) treating all costs as period costs.
- (ii) Which of the following is not depicted on break-even chart?
(A) Profit/Loss at different levels of output
(B) Sales to earn a given profit
(C) Contribution
(D) P/V ratio
- (iii) Difference between budgeted amounts and actual results is classified as
(A) standard deviation
(B) variances
(C) mean average
(D) weighted average
- (iv) Part of master budget, which covers capital expenditures, budgeted statement of cash flows and balance sheets are classified as
(A) financial budget
(B) capital budget
(C) cash flows budget
(D) balanced budget
- (v) The type of standard that is best suited for cost control objective is
(A) Normal standard
(B) Basic standard
(C) Expected standard
(D) Ideal standard
- (vi) The corrective actions after the analysis of variances has to be taken by
(A) Cost Auditor
(B) Management
(C) Both A and B
(D) None of the above

(b) Match the statement in Column I with most appropriate statement in Column II [1×4=4]

Column I	Column II
(i) Fixed Cost	(A) Cost Control
(ii) Standard cost	(B) Direct Material
(iii) Variable Cost	(C) If there is no production, loss is equal to
(iv) Normal idle time cost	(D) Factory overhead.

MTP_Final_Syllabus-2016_December2018_Set -1

- (c) State whether the following statements are True/False? [1×4=4]
- (i) When output increases, marginal cost per unit decreases.
 - (ii) Labour mix variance arises only when two or more category of workers perform the same task.
 - (iii) In flexible budgeting, one fixed budget is developed for each level of activity.
 - (iv) Learning curve is useful in case of experienced workmen.

Answer:

1. (a) (i) (C) matching variable costs against revenue and treating fixed costs as period costs
(ii) (D) P/V ratio
(iii) (B) variances
(iv) (A) financial budget
(v) (C) Expected standard
(vi) (B) Management

(b)

Column - I	Column - II
(i) Fixed Cost	(C) If there is no production, loss is equal to
(ii) Standard cost	(A) Cost Control
(iii) Variable Cost	(B) Direct Material
(iv) Normal idle time cost	(D) Factory overhead.

- (c) (i) False.
(ii) True.
(iii) True.
(iv) False.

Section II

Answer any three Question from Q. No 2, 3, 4 and 5. Each Question carries 12 Marks.

2. (a) Normal capacity of SUVAN LTD. is 240000 Units per annum. Cost structure for the year ending 31st March, 2015 is as follows:

	₹
Direct material cost per unit	25
Direct labour cost per unit (subject to a minimum of ₹2,50,000 per month)	20
Overheads: Fixed	18,00,000
Variable per unit	15

Semi variable ₹9,60,000 per year upto 50% capacity and additional ₹3,00,000 for every 20% increase in capacity or part thereof.

In the year 2016-17 the company to be worked at 60% capacity for the first four months but it was expected that it would work at 80% capacity for the remaining 8 months. During the first four months, the selling price per unit will be fixed at ₹100.

Required:

What should be the price per unit in the remaining eight months to earn a total Profit of ₹43,80,000?

MTP_Final_Syllabus-2016_December2018_Set -1

- (b) G Enterprise is operating at 60% capacity level producing and selling 60,000 units @ ₹50 per unit. Other relevant particulars are as follows:

	Cost per unit
Material	₹ 20
Conversion Cost (variable)	₹ 10
Dealer's margin (10% of sales)	₹ 5
Fixed cost for the period is ₹ 6,00,000	

As there is a stiff competition, it is not possible to sell all the products at the existing cost price structure. The following alternative proposals are considered:

- (i) Decrease selling price by 20%
(ii) Increase dealer's margin from 10% to 20%

Select the better alternative. Also calculate the sales volume required to maintain the same amount of profit under the alternative which is considered better assuming that volume of sales will not be a limiting factor under such alternative. Also assume that fixed cost will remain constant. [6+6]

Answer:

2. (a)

SUVAN LTD.

Statement showing cost sheet for the year 2016 – 17

Particulars	First four months 48,000 units		Remaining eight months 1,28,000 units		Total 176000 units (₹)
	Total (₹)	Per unit (₹)	Total (₹)	Per unit (₹)	
Direct material	12,00,000	25.00	32,00,000	25.00	44,00,000
Direct labour (subject to minimum ₹2,50,000 p.m.)	10,00,000	20.8333	25,60,000	20.00	35,60,000
Prime cost	22,00,000	45.8333	57,60,000	45.00	79,60,000
Overheads:					
Fixed (₹18,00,000 in the ratio 1: 2)	6,00,000	12.50	12,00,000	9.375	18,00,000
Variable @ ₹15 per unit	7,20,000	15.00	19,20,000	15.00	26,40,000
Semi variable- for first four months at 60% (960000+300000)× 4/12 & for next 8 months at 80% (960000+600000)×8/12	4,20,000	8.750	1040000	8.125	14,60,000
Total cost	39,40,000	82.0833	992000	77.50	13860000
Profit	8,60,000	1,79,167	3520000	27.50	4380000
Sales	48,00,000	100.00	1,34,40,000	105.00	18240000

Hence, sale price per unit for 8 months will be ₹105

(b)

Evaluation of Both the Option

	Selling Price Decreased by 20%	Increase dealer's Margin to 20%
Selling Price	$50 - (50 \times 20\%) = 40$	50
Less: Material	(20)	(20)
Less: Conversion Cost	(10)	(10)
Less: Dealers Margin Contribution per unit	(4)	(10)
Contribution per unit	6	10

Therefore, We must increase the dealer's commission from 10% to 20% as the contribution is higher in this alternative by $(10 - 6) = ₹ 4$.

Profit Required in the New Alternative = $[(50 - 20 - 10 - 5) \times 60,000 - 6,00,000] = ₹ 3,00,000$

Therefore, Contribution - Fixed Cost = ₹ 3,00,000

Therefore, Contribution = ₹ 3,00,000 + ₹ 6,00,000 = ₹ 9,00,000

MTP_Final_Syllabus-2016_December2018_Set -1

(3) **Material Mix Variance:**

= (Actual input in std. proportion – Actual input) × Std. cost of input/kg.	
A: [(0.50 × 10,500) - 5,200] × ₹40	₹ 2,000 (FAV)
B: [(0.30 × 10,500) - 3,600] × ₹60	₹27,000 (ADV)
C: [(0.20 × 10,500) - 1,700] × ₹95	₹38,000 (FAV)
	₹13,000(FAV)

(b) **Working Notes:**

Standard Rate of recovery of overhead rate = BOH/BH = ₹ 6,000/1,200 hrs. = ₹ 5

(1) Overhead expenditure variance = BOH - AOH = 6,000 - 6,400 = 400 (Adv)

Reconciliation of overheads expenditure variance

Overheads cost variance = Exp. Variance + Volume variance

1,400 (Adv) = 400 (Adv) + 1,000 (Adv)

(2) Actual overheads incurred

SOH = 1000 hrs at ₹ 5 = ₹ 5,000

O/H Cost Var. = SOH – AOH

1400A = 5000 – AOH

-1400 = 5000 – AOH

Therefore, AOH = 5000 + 1400 = ₹ 6,400

(3) Actual hours for Actual production (AH)

= Actual overheads incurred / Actual rate of recovery of overheads

= ₹ 6,400 / ₹ 8 = 800 hours (AH)

4. (a) **ADAMAS LTD.;** a newly established manufacturing company has an installed capacity to produce 1,00,000 units of a consumer product annually. However its practical capacity is only 90%. The actual capacity utilisation may be substantially lower, as the firm is new to the market and demand is uncertain. The following budget has been prepared for 90% capacity utilisation:

	Cost per unit (₹)
Direct Materials	12
Direct Labour	8
Direct Expense	5
Production Overheads	10 (40% variable)
Administration Overheads	5 (100% fixed)
Selling and Distribution	6 (50% variable)

You are required to prepare Flexible Budgets of a Consumer product at 70% and 80% levels of capacity utilization giving clearly the Variable Cost, Fixed Cost and the Total Costs under various heads at all stated levels.

- (b) XYZ Co. Ltd. has two divisions A and B. A sells half of its output on the open market and transfers the rest to Division B. Costs and revenue during 2013 are:

	A (₹)	B (₹)	Total (₹)
Sales	18,000	50,000	68,000
Cost of production in the division	26,000	22,000	48,000
Profit during the period			20,000

There are no opening and closing stocks.

You are required to find out the profit of each division and profit of the company using transfer prices:

(i) At cost

(ii) At cost plus 20%

(iii) At cost plus 20% but there is over spending in Division A ₹4,000.

[6+6]

MTP_Final_Syllabus-2016_December2018_Set -1

Ans:

4. (a) Flexible budget of a consumer product

Capacity Production (units)	70%		80%	
	70,000		80,000	
	Total cost (₹ in Lakhs)	Cost per unit (₹)	Total cost (₹ in Lakhs)	Cost per unit (₹)
Direct Costs:				
Direct materials	8.40	12.00	9.60	12.00
Direct labour	5.60	8.00	6.40	8.00
Direct expenses	3.50	5.00	4.00	5.00
Variable overheads				
Production overhead	2.80	4.00	3.20	4.00
Selling and distribution Overhead (Ref.W.N-1)	2.10	3.00	2.40	3.00
Total Variable Cost (A)	22.40	32.00	25.60	32.00
Fixed overheads:				
Production overhead	5.40	7.71	5.40	6.75
Administration overhead	4.50	6.43	4.50	5.62
Selling and Distribution Overhead (Ref. W.N.2)	2.70	3.86	2.70	3.38
Total fixed cost (B)	12.60	18.00	12.60	15.75
Total cost (A+B)	35.00		38.20	
Cost per unit (₹)		50.00		47.75

Working Note:

1. Variance Overheads per unit:

Production overhead: 40% of ₹10 = ₹4.00

Selling & Distribution overhead: 50% of ₹6 = ₹3.00

2. Fixed Overheads:

Practical capacity is 90% of 1,00,000 = 90,000 units

Production overhead: (60% of ₹10 = ₹90,000 × ₹6 = ₹5,40,000

Administration overhead (100% of ₹5 = 5): 9,00,000 × 5 = ₹4,50,000

Selling and Distribution overhead (50% of ₹6 = 3): 90,000 × 3 = ₹2,70,000

(b) (i) Calculation of profit when Transfer price is at cost

Particulars	A	B	Company
Sales	18,000	50,000	68,000
Less: Cost of production	13,000	35,000 (22,000+13,000)	48,000
Profit	5,000	15,000	20,000

(ii) Calculation of profit when Transfer price is at Cost Plus 20%.

Particulars	A	B	Company
Sales	33,600 [18,000 + (13,000 + 20% of 13,000)]	50,000	83,600
Less: Cost of production	26,000	37,600 [22,000+(13,000 + 20% of 13,000)]	63,600
Profit	7,600	12,400	20,000

(iii) Calculation of profit when Transfer price is cost plus 20% and over spending in Division A by ₹4,000:

Particulars	A	B	Company
Sales	33,600 (18,000 + 15,600)	50,000	83,600
Less: Cost of production	30,000 (26,000+4,000)	37,600 (22,000+15,600)	67,600
Profit	3,600	12,400	16,000

MTP_Final_Syllabus-2016_December2018_Set -1

5. Write short note on any three of the following:

[4×3=12]

- (a) P/V Ratio
- (b) Factors to be considered in Sales Budget (any four)
- (c) Causes of Price Variance (any four causes)
- (d) Reasons for use of Learning Curve (any four uses)

Answer:

5. (a) P/V ratio or contribution ratio is association of two variables. From this, one may assume that it is the ratio of profit and sales. But it is not so. It is the ratio of Contribution to Sales.

Symbolically, P/V ratio = Contribution /Sales × 100 → (1)

- P/V ratio = (C/ S × 100)
- Contribution = Sales × P/V ratio → (2)
- Sales = Contribution/(P/V ratio) → (3)

When cost accounting data is given for two periods, then:

P/V ratio = (Change in Contribution /Change in Sales × 100) or

P/V ratio = (Change in Profit /Change in Sales × 100)

It is to be noted that the above two formulas are valid as long as there are no changes in prices, means input prices and selling prices.

Usually, Sales = Cost + Profit.

i.e., it can also be written as Sales = Variable Cost + Fixed Cost + Profit and this is called general sales equation. Since Sales consists of variable costs and contribution, given the variable cost ratio, P/V ratio can be found out. Similarly, given the P/V ratio, variable cost ratio can be found out.

- (b) The sales budget is a forecast of total sales, expressed in terms of money or quantity or both. The first step in the preparation of the sales budget is to forecast as accurately as possible, the sales anticipated during the budget period. Sales forecasts are usually prepared by the sales manager assisted by the market research personnel.

Factors to be considered in preparing Sales Budget:- As business existence depends upon the sales it is going to make and therefore it is an important one to be prepared meticulously.

- (i) The locality of the market i.e., domestic or export
- (ii) The target customers i.e., industry or trade or a section or group of general public etc.,
- (iii) The product portfolio i.e., the number of products offered and their popularity among the target customers.
- (iv) The market share of each product and its influence on the product portfolio and the total market.

- (c) Causes of Material Price Variance:

- (i) Change in basic purchase price of material.
- (ii) Change in quantity of purchase or uneconomical size of purchase order.
- (iii) Rush order to meet shortage of supply, or purchase in less or more favourable market.
- (iv) Failure to take advantage of off-season price, or failure to purchase when price is cheaper.

- (d) There are a number of reasons why the experience curve and learning curve apply in most situations. They include:

Labour efficiency - Workers become physically more dexterous. They become mentally more confident and spend less time hesitating, learning, experimenting, or making

mistakes. Over time they learn short-cuts and improvements. This applies to all employees and managers, not just those directly involved in production.

Standardization, specialization, and methods improvements - As processes, parts, and products become more standardized, efficiency tends to increase. When employees specialize in a limited set of tasks, they gain more experience with these tasks and operate at a faster rate.

Technology-Driven Learning - Automated production technology and information technology can introduce efficiencies as they are implemented and people learn how to use them efficiently and effectively.

Better use of equipment - as total production has increased; manufacturing equipment will have been more fully exploited, lowering fully accounted unit costs. In addition, purchase of more productive equipment can be justifiable.

Part – B (Financial Management)

Section - III

6. Answer the following questions:

(a) Choose the correct answer from the given four alternatives:

[1×6=6]

- (i) When the concept of ratio is defined in respect to the items shown in the financial statements, it is termed as
- (A) Accounting ratio
 - (B) Financial ratio
 - (C) Costing ratio
 - (D) None of the above
- (ii) Liquidity ratios are expressed in
- (A) Pure ratio form
 - (B) Percentage
 - (C) Rate or time
 - (D) None of the above
- (iii) Which of the following are treated as long term investments?
- (A) Non-current investments
 - (B) Trade Investments
 - (C) Sinking fund investments
 - (D) All of the above
- (iv) Which of the following statement is true?
- (A) Cash is decreased when new debt is issued to purchase holiday merchandise.
 - (B) Accepting the credit offered by a supplier is a source of cash.
 - (C) Increasing the use of trade credit offered by a supplier is a use of cash.
 - (D) Collecting an accounts receivable is a use of cash.
- (v) The weighted average cost of capital for a firm is the:
- (A) Discount rate which the firm should apply to all of the projects it undertakes.
 - (B) Rate of return a firm must earn on its existing assets to maintain the current value of its stock.
 - (C) Coupon rate the firm should expect to pay on its next bond issue.
 - (D) Maximum rate which the firm should require on any projects it undertakes.

MTP_Final_Syllabus-2016_December2018_Set -1

- (vi) Relationship between Economic Value Added (EVA) and Net Present Value (NPV) is considered as
 (A) valued relationship
 (B) economic relationship
 (C) direct relationship
 (D) inverse relationship

- (b) Match the statement in Column I with appropriate statement in Column II [1×4=4]

Column I	Column II
(i) Working Capital	(A) Collection procedures
(ii) Credit policy	(B) Inventory Control
(iii) EOQ	(C) Factoring
(iv) Credit standard	(D) Collateral security.

- (c) State whether the following statements are True or False: [1×4=4]

- (i) Deciding on the total amount of assets needed by the firm is a key step in the investment decision.
 (ii) Permanent working capital includes fixed assets.
 (iii) Depreciation increases taxable income.
 (iv) If EBIT were to remain constant while the firm incurred additional interest expense, the degree of financial leverage would increase.

Answer:

6. (a) (i) (A) Accounting ratio
 (ii) (A) Pure ratio form.
 (iii) (D) All of the above
 (iv) (B) Accepting the credit offered by a supplier is a source of cash.
 (v) (B) Rate of return a firm must earn on its existing assets to maintain the current value of its stock.
 (vi) (C) direct relationship

- (b)

Column I	Column II
(i) Working Capital	(C) Factoring
(ii) Credit policy	(A) Collection procedures
(iii) EOQ	(B) Inventory Control
(iv) Credit standard	(D) Collateral security.

- (c) (i) True
 (ii) False
 (iii) False
 (iv) True

7. (a) The following information is available as on 31.03.2017:

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 Assts	1 : 3
Average Collection Period	1 month
Working capital	₹5,10,000

MTP_Final_Syllabus-2016_December2018_Set -1

Calculate the following as on 31.03.2017:

- (A) Fixed assets
- (B) Inventory
- (C) Debtors
- (D) Cash and Bank Balance (combined figure)
- (E) Net worth
- (F) Long term Debts
- (G) Current Liabilities

(b) AT Ltd. is trying to estimate the first – year operating cash flow (at t =1) for a proposed project. The finance staff has collected the following information:

Projected sales = ₹1 crore

Operating costs = ₹70 lakhs (not including depreciation)

Depreciation = ₹20 lakhs

Interest expense = ₹20 lakhs

The company faces a 40% tax rate. What is the project's operating cash flow for the year (t=1)? [7+5]

Answer:

7. (a) (i) $\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = 2.7: 1$
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 $\times 85\% = ₹12,75,000$
 4. Sales = Net Worth $\times 24 = 15,00,000 \times 24 = ₹36,00,000$
 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 = 13
Hence, Inventory = CA $\frac{₹8,10,000}{3} = ₹2,70,000$
 7. Cash and Bank = CA – Inventory – Debtors
= ₹8,10,000 – ₹2,70,000 – ₹3,00,000
= ₹2,40,000

MTP_Final_Syllabus-2016_December2018_Set -1

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

(b) Operating cash Flow: (t=1)

Sales revenue	100,00,000
Operating costs	70,00,000
Depreciation	20,00,000
Operating income before taxes	10,00,000
Taxes (40%)	4,00,000
Operating income after taxes	6,00,000
Add back depreciation	20,00,000
Operating cash flow	26,00,000

8. (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.

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?

- (b) A company plans to sell 48000 units next year. The following information is given:

Raw Materials = 100(per unit)
 Manufacturing expense = 30(per unit)
 Selling cost = 20(per unit)
 Selling Price = 180 (per unit)
 Average Cash balance = 1,20,000

The duration at various stages is expected to be as follows:

Raw materials stage 2 months

Work in progress 1 month (Raw Materials 100% complete; Manufacturing 25% complete)

Finished goods 1 month

Debtors 1 month

Assume uniform sales of 4000 units per month. Estimate the gross working capital requirement taking Debtors at Cost; [6+6]

Answer:

8. (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

MTP_Final_Syllabus-2016_December2018_Set -1

(i) Degree of Financial Leverage:

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

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:

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

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.

(b) Statement of Gross Working Capital

Item	Workings	Amount (₹)
Current Assets		
Raw Materials	$4000 \times 2 \times 100$	8,00,000
WIP:		
Materials	$4000 \times 100 \times 100\% \times 1 \text{ month}$	4,00,000
Manufacturing Expenses	$4000 \times 30 \times 25\% \times 1 \text{ month}$	30,000
Finished Goods	$4000 \times 130 \times 1 \text{ month}$	5,20,000
Debtors (at cost)	$4000 \times 150 \times 1 \text{ month}$	6,00,000
Cash		1,20,000
Total Gross WC Requirement		24,70,000

9. (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

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.

MTP_Final_Syllabus-2016_December2018_Set -1

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 .

(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)

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

[7+5]

Answer:

9. (a) Calculation of specific Cost of Capital

(1) Cost of Debt

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

(2) Cost of Preference Capital

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

(3) Cost of Equity

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

MTP_Final_Syllabus-2016_December2018_Set -1

Computation of Weighted Average Cost of Capital (WACC) based on Book Value Weights

Source	₹ (in Crores)	Weight	Cost of Capital (%)	WACC (Ko)
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

- (b) PV of cash inflows at 14% = Cost of Project
Cost of Project = PV of ₹ 4,20,000 for 4 years at 14% = $4,20,000 \times 2.913 = ₹12,23,460$

- (i) NPV:
PI = PV of Cash Inflows / PV of Initial Cash Outflow = 1.04291

Hence, PV of Cash Inflows = Initial Cash Outflow (Cost of Project) $12,23,460 \times 1.04291 = ₹ 12,75,959$

NPV = PVCIF – Cash Outflow = $12,75,959 - 12,23,460 = ₹ 52,499$

- (ii) Cost of Capital:
PV of Cash Inflows at cost of Capital(r) for 4 years = ₹ 12,75,959
PV Factor for 4 years = $12,75,959 / 4,20,000 = 3.038$ which is at 12%. Hence, Cost of Capital = 12%.

10. Write short note on any three of the following:

[3×4=12]

- (a) Issue of Commercial Papers in India
- (b) Criticisms of CAPM
- (c) Importance of Cash Management.
- (d) Basic Propositions of MM Approach

Answer:

10. (a) Issue of Commercial Papers in India

CP was introduced as a money market instruments in India in January, 1990 with a view to enable the companies to borrow for short term. Since the CP represents an unsecured borrowing in the money market, the regulation of CP comes under the purview of the Reserve Bank of India:

- (i) CP can be issued in multiples of ₹5 lakhs.
 - (ii) CP can be issued for a minimum duration of 15 days and maximum period of 12 months.
 - (iii) For issuing CP the company's net worth should be more than ₹4 crores.
 - (iv) CP can neither be redeemed before maturity nor can be extended beyond the maturity period.
 - (v) CP issue requires a credit rating of P2 from CRISIL or A2 from ICRA.
- (b) The criticisms of Capital Assets Pricing Model (CAPM) are enumerated below:
- (i) CAPM makes a number of assumptions that weaken its usefulness.
 - (ii) The assumptions that there are no imperfections in the markets, there are no transaction costs and the Betas of shares do not change, are not realistic.
 - (iii) It does not take into account that over a period of time, the market rate of return and the risk-free return can change.
 - (iv) CAPM always considers a high level of diversification of portfolios, which may not be always possible.

(c) Some of the importance of Cash Management is:

- (i) Cash Management ensures that the firm has sufficient cash during peak times for purchase and for other purposes.
- (ii) Cash Management help to meet obligatory cash out flows that are all due.
- (iii) Cash Management assists in planning capital expenditure projects.
- (iv) Cash Management helps to arrange for outside financing at favorable terms and conditions, if necessary.
- (v) Cash Management helps to allow the firm to take advantage of discount, special purchases and business opportunities.
- (vi) Cash Management helps to invest surplus cash for short or long term periods to keep the idle funds fully employed.

(d) Basic Propositions:

M-M Hypothesis can be explained in terms of two propositions of Modigliani and Miller. They are:

- The overall cost of capital (K_o) and the value of the firm are independent of the capital structure. The total market value of the firm is given by capitalizing the expected net operating income by the rate appropriate for that risk class.
- The financial risk increases with more debt content in the capital structure. As a result cost of equity (K_e) increases in a manner to offset exactly the low-cost advantage of debt. Hence, overall cost of capital remains the same.