INTERMEDIATE EXAMINATION
Syllabus 2016

Paper 10: COST & MANAGEMENT ACCOUNTING AND FINANCIAL MANAGEMENT (CMFM)

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

There are Sections A, B, C and D to be answered subject to instructions given against each.
(Time allotted for Sections A and B shall be limited to a maximum of 50 minutes)

Section A **You are required to answer all the questions. Each question carries 1 mark.** **Instructions: Each question is followed by 4 Answer choices and only one is correct. You are required to select the choice which according to you represents the correct answer.**					**20 × 1 = 20 Marks**
1.	**a.**	Management accounting relate to:			
		(i)	Recording of accounting data		
		(ii)	Recording of costing data		
		(iii)	Presentation of accounting data	A	
		(iv)	All of the above		
	b.	Which of the following is not a theory of capital structure?			
		(i)	Net income approach		
		(ii)	Net operating income approach		
		(iii)	Weighted average cost of capital	A	
		(iv)	None of the above		
	c.	Absorption costing is also known as _____.			
		(i)	Direct costing		
		(ii)	Forward costing		
		(iii)	Full costing	A	
		(iv)	Partial costing		
	d.	Which one of the following is a medium term source of financing ?			
		(i)	Public Deposits		
		(ii)	Lease Financing		
		(iii)	Euro Debt Issue		
		(iv)	All of the above	A	
	e.	Funds Flow Statement reveals the change in _____ between two Balance Sheet dates.			
		(i)	Working capital	A	
		(ii)	Internal capital		
		(iii)	Share capital		
		(iv)	Both (i) & (iii)		
	f.	The operating profit ratio establishes the relationship between operating profit and:			
		(i)	Net sales	A	
		(ii)	Gross sales		
		(iii)	Average inventory		
		(iv)	Closing inventory		

	g.	The margin of safety can be increased by _____.			
		(i)	Decreasing selling price		
		(ii)	Decreasing production		
		(iii)	Increasing fixed costs		
		(iv)	Decreasing variable costs	A	
	h.	Return on equity is obtained by dividing net profit (after tax) less preference divided by :			
		(i)	Equity capital	A	
		(ii)	Current assets		
		(iii)	Total capital		
		(iv)	Equity capital minus preference capital		
	i.	A high stock turnover ratio does not mean that the company is:			
		(i)	Buying in small lots		
		(ii)	Efficient and sells quickly		
		(iii)	Buying in big lots and sells slowly	A	
		(iv)	None of the above		
	j.	Standard costing helps in :			
		(i)	Measuring efficiency	A	
		(ii)	Reducing losses		
		(iii)	Controlling prices		
		(iv)	None of these		
	k.	Basic standard is established for a :			
		(i)	Short period		
		(ii)	Current period		
		(iii)	Indefinite period	A	
		(iv)	None of these		
	l.	The immediate solvency ratio is:			
		(i)	Quick ratio	A	
		(ii)	Current ratio		
		(iii)	Stocks turns ratio		
		(iv)	Debtors turnover ratio		
	m.	When P/V ratio is 50% and Margin of Safety ratio is 20% the profit on sales is _____.			
		(i)	40%		
		(ii)	30%		
		(iii)	20%		
		(iv)	10%	A	
	n.	EBIT/ Total Assets ratio is:			
		(i)	Liquidity ratio		
		(ii)	Profitability ratio	A	
		(iii)	Solvency ratio		
		(iv)	Turnover ratio		
	o.	The difference between actual cost and standard cost is known as _____.			
		(i)	Variance	A	
		(ii)	Profit		

		(iii)	Differential cost		
		(iv)	None of these		
	p.	Capital budgeting refers to the_____.			
		(i)	Demand and supply of capital		
		(ii)	Overall cost of capital		
		(iii)	Managerial technique of planning capital expenditures of the company	A	
		(iv)	None of the above		
	q.	Factory overhead costs under a standard cost system are debited to work in process inventory at_____.			
		(i)	Normal costs		
		(ii)	Standard costs		
		(iii)	Actual costs		
		(iv)	Both standard and actual costs	A	
	r.	Sunk cost is related with:			
		(i)	Current assets		
		(ii)	Fixed assets	A	
		(iii)	Inventory of raw material		
		(iv)	Bank overdraft		
	s.	In which type of cost the depreciation is not included?			
		(i)	Imputed cost		
		(ii)	Notional cost		
		(iii)	Out of pocket cost	A	
		(iv)	Implied cost		
	t.	Which of the following would be consistent with a conservative approach to financing working capital?			
		(i)	Financing short-term needs with short-term funds.		
		(ii)	Financing short-term needs with long-term debt.	A	
		(iii)	Financing seasonal needs with short-term funds.		
		(iv)	Financing some long-term needs with short-term fund		
	Section B **You are required to answer all the questions. Each question carries 1 mark.** **Instructions: Each question is followed by a space where you are required to type your answer.**				**10 × 2 = 20 Marks**
2.	a.	What is Financial Leverage?			
		Type your answer here The Financial Leverage may be defined as a percentage increase in EPS associated with a given percentage increase in the level of EBIT.			
	b.	Which are the basic functions of management?			
		Type your answer here Planning, Organising, Controlling, Decision-making and Staffing.			
	c.	What is known as the difference between the costs of two alternatives?			
		Type your answer here Differential cost.			
	d.	What is Margin of Safety?			

		Type your answer here Margin of Safety is represented by excess sales over and above the break-even point sales .	
	e.	Which level of management is concerned with the planning and controlling?	
		Type your answer here Top level management	
	f.	What do you mean by Stock splits?	
		Type your answer here Stock splits means splitting one share into many, say, one share of Rs. 100 into 5 shares of Rs. 20. Stock splits is a tool used by the companies to regulate the prices of shares.	
	g.	What is Budget Manual?	
		Type your answer here Budget Manual is a document which contains standing instructions regarding the procedures to be followed at the time of budget preparation.	
	h.	What is the significance of standard cost?	
		Type your answer here Standard cost is a pre-determined cost which shows in advance what each product should cost under the given situation.	
	i.	What is the ratio is used to measure the relationship between the net profit before interest and tax to sales?	
		Type your answer here Operating profit ratio.	
	j.	Given risk-free rate of return = 5%, market return = 10%, cost of equity = 15%, what is the value of beta (β)?	
		Type your answer here 2	

Section C
You are required to answer any 4 out of 6 questions in this section
Instructions: Each question is followed by a space where you are required to type your answer.

12 × 4 = 48 Marks

3. a. A company which produces three products furnishes you the following information for 2021-22: — 3+3

Particulars	Product A	Product B	Product C
Selling price per unit	200	100	75
Profit volume ratio (%)	10	15	20
Maximum sales potential units	30,000	20,000	15,000
Raw material content as % of variable cost	50	50	50

The expenses - fixed are estimated at Rs.5,00,000. The company uses a single raw material in all the three products. Raw material is in short supply and the company has a quota for the supply of raw materials of the value of Rs. 15,00,000 for the manufacture of its products to meet its sales demand.

You are required to:-

a. Set a product mix which will give a maximum overall profit keeping the short supply of raw material in view.

b. Compute that maximum profit.

Type your answer here

Statement showing computation of contribution per rupee of material and determination of priority for profitability:

Particulars	A	B	C
Selling price per unit(Rs)	200	100	75
contribution	20	15	15
variable cost	180	85	60
Raw material cost(50%)	90	42.5	30
Contribution per rupee of material	20/90=0.22	15/42.5=0.35	15/30=0.5
Rank	III	II	I

Statement showing optimum mix under given conditions and computation of profit mix:

Particulars	A	B	C	Total
No of units	2,222.22	20,000	15,000	
contribution per unit	20	15	15	
Total contribution(RS)	44,444	3,00,000	2,25000	5,69,444
Fixed cost(Rs)				5,00,000
Profit(RS)				69,444

Available material	15,00,000
less material for C (15000 x 30)	4,50,000
less material for B (20,000 x 42.5)	8,50,000
	2,00,000

No. of units of A = 2,00,000 / 90 = 2222.22 units approximately.

b. A company produces and markets industrial containers and packing cases. Due to competition, the company proposes to reduce the selling price. If the present level of profit is to be maintained, indicate the number of units to be sold if the proposed reduction in selling price is: (a) 5%; (b) 10%; (c) 15%. 2+2+2

The following additional information is available:

	Rs.	Rs.
Present Sales Turnover (30,000 units)		3,00,000
Variable Cost (30,000 units)	1,80,000	
Fixed Cost	70,000	2,50,000
Net Profit		50,000

Type your answer here

a) At a Price Reduction of 5% - 34,286 units

b) At a Price Reduction of 10% - 40,000 units

c) At a Price Reduction of 15% - 48,000 units

Working Notes:

Calculation of Contribution

	Present Conditions	Anticipated Conditions (Reduction in Selling Price)		
		5% Reduction	10% Reduction	15% Reduction
	Rs.	Rs.	Rs.	Rs.
Selling Price per unit	10.00	9.50	9.00	8.50
Less: Variable cost per unit (Rs. 1,80,000/30,000 units)	6.00	6.00	6.00	6.00
Contribution per unit	4.00	3.50	3.00	2.50

Number of units to be sold to earn desired profits = Total Fixed Cost + Desired Profits Contribution Per Unit

(i) Under Present Conditions = (Rs. 70,000 + Rs. 50,000) /Rs. 4 = 30,000 units

(ii) At a Price Reduction of 5% = (Rs. 70,000 +Rs. 50,000)/Rs. 3.50 = 34,286 units

(iii) At a Price Reduction of 10% = (Rs. 70,000 +Rs. 50,000)/Rs. 3 = 40,000 units

(iv) At a Price Reduction of 15% =(Rs. 70,000 + Rs. 50,000)/Rs. 2.50 = 48,000 units

4.	a	The standard costs of a certain chemical mixture is: 40% Material A at Rs. 200 per ton 60% Material B at Rs. 300 per ton A standard loss of 10% is expected in production During a period they used 90 tons of Material A at the cost of Rs.180 per ton 110 tons of Material B at the cost of Rs. 340 per ton The weight produced is 182 tons of good production. Calculate and present Material Cost, price, usage , yield and Mix variance	5
		Type your answer here A. Material yield Variance = Rs.578 (F) B. Material Mix Variance = 1,000 (F) C. Material usage Variance = 1,578 (F) D. Material Price Variance = 2,600 (A) E. Material Cost Variance = 1,022 (A)	

Rough Work

Material	Standard data			Actual data		
	Quantity (Kg.)	Rate (Rs.)	Amount (Rs.)	Quantity (Kg.)	Rate (Rs.)	Amount (Rs.)
X	80	200	16,000	90	180	16,200
Y	120	300	36,000	110	340	37,400
	200		52,000	200		53,600
Less: loss	20			18		
	180		52,000	182		53,600

Computation of SQ :
SQ = (RSQ for that product/RSQ for all product) × AQ for that product
For A = (80/180) × 182
= 80.88 units
For B = (120/80) × 182
= 121.33
Where
Material A SQSP (1) = 80.88 × 200 = 16,176
RSQSP (2) =16,000
AQSP (3) = 90 x 200 = 18,000
AQAP (4) =16,200
Material B SQSP (1) = 121.33 x 300 = 36,400
RSQSP (2 = 36,000
AQSP (3) = 110 x 300 = 33,000
AQAP (4) = 37,400

Total SQSP (1) = 52,578 (16,176 + 36400)
Total RSQSP (2) = 52,000 (16000 + 36000)
Total AQSP (3) = 51,000(18000 + 31000)
Total AQAP (4) = 53,600(16200 + 37400)

(1) SQSP = Standard cost of Standard Material
(2) RSQSP = Revised Standard Cost of Material
(3) AQSP = Standard Cost of Actual Material
(4) AQAP = Actual Cost of Material
Computation of Required Variances
a. Material yield Variance = (1) - (2) = Rs.578 (F) [Rs. (52,578 - 52,000)]
B. Material Mix Variance = (2) - (3) = 1,000 (F) [Rs. (52,000 - 51,000)]
C. Material usage Variance = (1) - (3) = 1,578 (F) [Rs. (52,578 - 51,000)]
D. Material Price Variance = (3) - (4) = 2,600 (A) [Rs. (51,000 - 53,600)]
E. Material Cost Variance = (1) - (4) = 1,022 (A) [Rs. (52,578)

b. From the below-mentioned data calculate various sales variances — 5

Standard			Actual		
Quantity	S.P.	Total	Quantity	A.P.	Total
A – 1600	24	38,400	A – 2400	20	48,000
B – 1400	18	25,200	B – 1400	18	25,200
C – 600	12	7,200	C – 750	14	10,500
D – 400	15	6,000	D – 450	14	6,300
4000		76,800	5000		90,000

Type your answer here

a. Sales Sub-Volume Variance = Rs. 19,200 (F)

b. Sales Mix Variance = Rs. 2,550 (F)

c. Sales Volume Variance = Rs. 21,750 (F)

d. Sales Price Variance = Rs. 8,550 (A)

e. Sales Volume Variance = Rs. 13,200 (F)

Rough Work

Material	AQAP(1)(Rs.)	AQSP(2)(Rs.)	RSQSP(3)(Rs.)	SQSP(4)(Rs.)
A		2400 x 24	2000 x 24	
B		1400 x 18	1750 x 18	
C		750 x 12	750 x 12	
D		450 x 15	500 x 15	
A	48,000	57,600	48,000	38,400
B	25,200	25,200	31,500	25,200
C	10,500	9,000	9,000	7,200
D	6,300	6,750	7,500	6,000
	90,000	98,550	96,000	76,800

RSQ = (SQ for that product /SQ for all products) × AQ for all products

e.g. = 1,600 /4,000 × 5,000 = 2,000 units

1. AQAP = Actual Sales = Rs. 90,000

2. AQSP = Actual Quantity of Sales at Standard Prices = Rs. 98,550

3. RSQSP = Revised Standard on Budgeted Sales = Rs. 96,000

4. SQSP = Standard or Budgeted Sales Rs. 76,800

a. Sales Sub-Volume Variance (3 -4) Rs. 19,200 (F)

b. Sales Mix Variance (2–3) Rs. 2,550 (F)

c. Sales Volume Variance (2 -4) Rs. 21,750 (F)

d. Sales Price Variance (1- 2) Rs. 8,550 (A)

e. Sales Volume Variance (1-4) Rs. 13,200 (F)

c. What is Profit variance? — 2

Type your answer here

Profit Variance is the difference between budgeted profit and actual profit. This represents the difference between budgeted profit and actual profit. The formula is:
Profit Variance = Budgeted Profit – Actual Profit

5. a. State the differences between the fixed budget and the flexible budget. 4

Type your answer here

Fixed Budget	Flexible Budget
It does not change with actual volume of activity achieved. Thus it is known as rigid or inflexible budget.	It can be recasted on the basis of activity level to be achieved. Thus it is not rigid.
It operates on one level of activity and under one set of conditions. It assumes that there will be no change in the prevailing conditions, which is unrealistic.	It consists of various budgets for different levels of activity.
Here as all costs like – fixed, variable and semi-variable are related to only one level of activity so variance analysis does not give useful information.	Here analysis of variance provides useful information as each cost is analysed according to its behaviour.
If the budgeted and actual activity levels differ significantly, then the aspects like cost ascertainment and price fixation do not give a correct picture.	Flexible budgeting at different levels of activity facilitates the ascertainment of cost, fixation of selling price and tendering of quotations

b. A company experiences difficulty in its budgeting process because it finds it necessary to qualify the learning effect as new products are introduced.
Substantial product changes occur and result in the need for retraining.
An order for 30 units of a new product has been received by ABC. So far, 14 have been completed; The first unit required 40 direct labour hours and a total of 240 direct labour has been recorded for the 14 units. The production manager expects an 80% learning effect for this type of work. The company uses standard absorption costing. The direct costs attributed to the centre in which the unit is manufactured and its direct materials costs are as follows:

Direct Material	30.00 per unit.
Direct labour	6.00 per hour
variable overhead	0.50 per direct labour hour
fixed overhead	6,000 per four-week operating period

There are ten direct employees working a five-day week, eight hours per day. Personal and other downtime allowances account for 25% of total available time.
The company usually quotes a four-week delivery period for orders.
You are required to:
The company usually quotes a four-week delivery period for orders.
You are required to:
(i) Determine whether the assumption of an 80% learning effect is a reasonable one in this case, by using the standard formula y = axb 2
Where Y = the cumulative average direct labour time per unit (productivity)
a = the average labour time per unit for the first batch.
x = the cumulative number of batches produced.
b = the index of learning

Type your answer here
Total time taken to produce 14 units
Rough Work
Y = ax^b
Y = 40(14)^0.322
= 17.14 (average time)
Total time = 17.14 × 14 = 239.96 = 240 hours
It is true that the learning ratio 80% is effective.

(ii) Calculate the number of direct labour hours likely to be required for an expected second order of 20 units. — 2

Type your answer here 166.1 hours
Rough Work
Initial order 30 units
Y = 40 (30)-0.322 = 13.380 hours (Average time)
total order 50 units
Y = 40 (50)-0.322 = 11.35 hours (Average time)
Total time for 30 units = 13.38 × 30 = 401.4 hours
Total time for 50 units = 11.35 × 50 = 567.5 hours
Time taken for 20 units from 31 to 50 units (567.5 - 401.4) = 166.1 hours

c. The Balance Sheets of a XYZ Ltd. as on 31st March, 2021 and 2022 are given below: — 4

Liabilities	31-03-21	31-03-22	Assets	31-03-21	31-03-22
Equity Share capital	14,20,000	19,50,000	Fixed Assets	38,00,000	45,80,000
Capital Reserve		52,000	Less: Depreciation	11,80,000	14,20,000
General Reserve	8,64,000	9,60,000		26,20,000	31,60,000
Profit & Loss A/c	2,64,000	3,72,000	Investment	4,50,000	3,75,400
9% Debentures	9,72,000	6,60,000	Sundry Debtors	12,20,000	13,20,000
Sundry Creditors	5,63,000	6,20,000	Stock	1,36,000	1,75,000
Bills Payable	25,000	35,000	Cash in hand	29,000	38,000
Proposed Dividend	25,000	36,000	Preliminary Expenses	1,08,000	40,000
Provision for tax	4,30,000	4,05,000			
Unpaid dividend		18,400			
TOTAL	45,63,000	51,08,400	TOTAL	45,63,000	51,08,400

Additional Information:

During the year ended 31st March, 2022 the company:

1. Sold a machine for Rs.1,16,000; the cost of the machine was Rs.2,50,000 and depreciation provided on it was Rs.96,000.
2. Provided Rs. 4, 36,000 as depreciation on fixed assets.
3. Sold some investment and profit credited to capital reserve.
4. Redeemed 35% of the debenture @ Rs. 105.
5. Decided to write off fixed assets costing Rs. 65,000 on which depreciation amounting to Rs.45,000 has been provided.
6. Debentures redeemed at the beginning of the year and issued at the end of the year.

You are required to calculate the cash flow from the operating activities.

Type your answer here Cash inflow from operating activity is Rs. 7,78,872

Rough Work

Cash Flow Statement of XYZ Ltd.

Particulars	Rs.	Rs.
A. Cash flow from Operating Activities		
Profit and Loss A/c(372000-264000)		10,80,000
Adjustments:		
Increase in general reserve	96,000	
Depreciation	4,36,000	
Provision for tax	4,05,000	
Loss on sale of machine	38,000	
Premium on redemption of debentures	17,010	
Proposed dividend	36,000	
Preliminary expenses written off	68,000	
Fixed assets written off	20,000	
Interest on debentures	56,862	11,72,872
Funds from operations		12,80,872
Increase in sundry creditors	57,000	
Increase in bills payable	10,000	
	67,000	
Increase in sundry debtors	(1,00,000)	
Increase in stock	(39,000)	(7,20,000)
Cash before tax		1,20,8872
-Tax paid		4,30,000
Cash inflow from operating activity		7,78,872

6. a. Based on the following information, you are required to determine the market value of equity shares of AB India Ltd. as per Gordon's model: (4)

Earnings of the company Rs.20,00,000

Dividend paid Rs.16,00,000

Number of shares outstanding Rs. 4,00,000

Price earnings ratio 8

Rate of return on investment 0.15

Are you satisfied with the current dividend policy of the company? If not, what should be the optimal dividend payout ratio in this case?

Type your answer here

As k is the reciprocal of price earning ratio, k =1/8= 0.125

E =Total Earnings/no of shares outstanding

= 20,00,000/4,00,000 = Rs. 5

D = Dividend paid/No. of shares outstanding

= 16,00,000/4,00,000 = Rs. 4

B = 1-D/E

= 1-⅘

= ⅕-0.2

P = E(1-b)/K-br

= 5(1-0.2)/0.125-0.2(0.15) = 42.11 approx

No, we are not satisfied with the current dividend policy.

Since r (=0.15) > k (=0.125), AB India Ltd. is considered as a growth company. According to Gordon's model, the optimal dividend payout ratio for a growth company is nil. Therefore, in the case of AB India Ltd., the optimal dividend payout ratio should be zero.

b. X Corporation has estimated that for a new product its break-even point is 2,000 units if the items are sold for Rs.14 per unit; the Cost Accounting department has currently identified variable cost of Rs.9 per unit. Calculate the degree of operating leverage for sales volume of 2,500 units and 3,000 units. What do you infer from the degree of operating leverage at the sales volumes of 2,500 units and 3,000 units and their difference if any? . — 4

Type your answer here

Statement of Operating Leverage

Particulars	2,500 Units	3,000 Units
Sales @ Rs. 14 per unit	35,000	42,000
Variable cost @ Rs. 149 per unit	22,500	27,000
Contribution	12,500	15,000
Fixed cost Rs. [2,000 × (14 - 9)]	10,000	10,000
EBIT	2,500	5,000
Operating Leverage = Contribution /PBT	12,500/ 2,500	15,000 /5,000
Operating Leverage	5	3

At the sales volume of 3000 units, the operating profit is Rs. 5,000 which is double the operating profit of Rs. 2,500 (sales volume of 2,500 units) because of the fact that the operating leverage is 5 times at the sales volume of 2,500 units. Hence increase of 20% in sales volume, the operating profit has increased by 100% i.e., 5 times of 20%. At the level of 3,000 units, the operating leverage is 3 times. If there is change in sales from the level of 3,000 units, the % increase in EBIT would be three times that of % increase in sales volume.

c. State the features of an appropriate capital structure. — 4

Type your answer here

A capital structure will be considered to be appropriate if it possesses following features:

(i) Profitability: The capital structure of the company should be most profitable. The most profitable capital structure is one that tends to minimize cost of financing and maximize earnings per equity share.

(ii) Solvency: The pattern of capital structure should be so devised as to ensure that the firm does not run the risk of becoming insolvent. Excess use of debt threatens the solvency of the company. The debt content should not, therefore, be such that which increases risk beyond manageable limits.

(iii) Flexibility: The capital structure should be flexible to meet the requirements of changing conditions. Moreover, it should also be possible for the company to provide funds whenever needed to finance its profitable activities.

(iv) Conservatism: The capital structure should be conservative in the sense that the debt content in the total capital structure does not exceed the limit which the company can bear. In other words, it should be such as is commensurate with the company's ability to generate future cash flows.

(v) Control: The capital structure should be so devised that it involves minimum risk of loss of control of the company.

7. a. S Ltd. sells goods in domestic market at a gross profit of 25 percent, not counting on depreciation as a part of the 'cost of goods sold'. Its estimates for next year are as follows: — 6

Amount (Rs. in Lakhs)

Sales - Home at 1 month's credit	1,200
Exports at 3 months' credit, selling price 10 percent below home price	540
Materials used (suppliers extend 2 months' credit)	450
Wages paid, V2 month in arrears	360
Manufacturing expenses, paid 1 month in arrears	540
Administrative expenses, paid 1 month in arrears	120
Sales promotion expenses (payable quarterly- in advance)	60
Income - tax payable in 4 instalments of which one falls in the next financial year	150

The company keeps 1 month's stock of each of raw materials and finished goods and believes in keeping Rs. 20 lakh as cash. Assuming a 15 percent safety margin, ascertain the estimated Working Capital requirement of the company (ignore work -in-process).

Type answer here

Working Capital requirement of the company is Rs. 327.75 Lakhs

Rough Work

Statement showing determination of Working Capital

Current assets	(Rs.)	Workings (Amount in Rs. lakhs)
Cash	20.00	
Raw Material	37.50	(450 lakhs / 12)
Finished Goods	122.50	(1,470 lakhs / 12)
Debtors Domestic market	100.00	(1,200 / 12)
Export market	135.00	(540 x 3 / 12)
Sales promotion expense	15.00	3 (60 lakhs x 3 / 12)
Total Current Assets (A)	430.00	

Current Liabilities	(Rs.)
Raw Materials (450 x 2 / 12)	75.00
Wages (360 / 24)	15.00
Manufacturing expenses (540 /12)	45.00
Administration expenses (120/12)	10.00
Total Current Liabilities (B)	145.00
Net Current Assets	285.00
Add: Safety margin @ 15%	42.75
Working Capital Requirement	327.75

Working notes:

1. Cost of Production

	Rs. in lakhs
Material used	450
Wages paid	360
Manufacturing expense	540
Administration expense	120
Total	1470

2. Tax aspect is ignored as it is to be paid out of profits.

b. A chemical company is considering replacing an existing machine with one costing Rs. 65,000. The existing machine was originally purchased two years ago for Rs. 28,000 and is being depreciated by the straight line method over its seven-year life period. It can currently be sold for Rs. 30,000 with no removal costs. The new machine would cost Rs. 10,000 to install and would be depreciate over five years. The management believes that the new machine would have a salvage value of Rs. 5,000 at the end of year 5. The management also estimates an increase in net working capital requirement of Rs. 10,000 as a result of expanded operations with the new machine. The firm is taxed at a rate of 55% on normal income and 30% on capital gains. The company's expected after-tax profits for next 5 years with existing machine and with new machine are given as follows: 3+3

Expected after-tax profits		
Year	With existing machine (Rs.)	With new machine (Rs.)
1	2,00,000	2,16,000
2	1,50,000	1,50,000
3	1,80,000	2,00,000
4	2,10,000	2,40,000
5	2,20,000	2,30,000

(i) Calculate the net investment required by the new machine.

(ii) If the company's cost of capital is 15%, determine whether the new machine should be purchased.

Type your answer here

Appraisal of replacement decision under NPV method

Step 1:

Calculation of present value of net investment required

	(Rs.)	(Rs.)
Cost of new asset		65,000
Add: Installation cost		10,000
		75,000
Add: Additional WC		10,000
		85,000
Less: Sale proceeds of old machine	30,000	
Less: Tax [8,000 x 55/100 + 2000 x 30/100]	5,000	25,000
Net Investment required		60,000

Step 2:

Calculation of Present Value of Incremental Operating cash inflows for 5 years

Year	CIAT (PAT + Dep)	New	Incremental	PV factor at 15%	Present Value
1	2,04,000	2,30,000	26,000	0.8696	22,609
2	1,54,000	1,64,000	10,000	0.7561	7,561
3	1,84,000	2,14,000	30,000	0.6575	19,725
4	2,14,000	2,54,000	40,000	0.5718	22,872
5	2,24,000	2,44,000	20,000	0.4972	9,944
PV of cash inflows for 5 years					82,711

Step 3:

Calculation of PV of terminal cash inflow

	(Rs.)
Salvage value of asset [No tax because book value and salvage value are equal]	5,000
Working capital recovered [100% recovered]	10,000
Terminal cash inflows	15,000

Its PV at the end of 5th year = 15,000 x 0.4972 = 7,458

Step 4:

Calculation of NPV

PV of total cash inflows [82,711 + 7,458] = 90,169

(–) Outflow = 60,000

NPV = 30,169

Comment: As NPV is positive, it is advised to replace.

Note 1:

Depreciation for old Machine = 28,000 / 7 = Rs. 4,000

Depreciation for new Machine = 65,000 + 10,000 - 5,000/ 5 = Rs. 14,000

8.		**You are required write Short Notes on any 4 out of 5.**	**4 × 3 = 12 Marks**
	a.	Limitations of learning curve	

Type your answer here

The following points limiting the usefulness of learning curves should be noted:-

1. The learning curve is useful only for new operations where machines do not constitute a major part of the production process. It is not applicable to all productions. E.g. new and experienced workmen.
2. The learning curve assumes that the production will continue without any major interruptions. If for any reason the work in interrupted, the curve may be deflected or assume a new slopes
3. Charges other than learning may affect the learning curve. For example, improvement in facilities, arrangements, and equipment as well as personnel morale and performance may be factors influencing the curve. On the other hand, negative developments in employee attitudes may also affect the curve and reverse or retard the progress of improvement.
4. The characteristic 80 percent learning curve as originally obtaining in the air force industry in U.S.A has been usually accepted as the percentage applicable to all industries. Studies show that there cannot be a unique percentage which can be universally applied.

b. Cost Accounting vs Management Accounting

Type your answer here

Cost Accounting	Management Accounting
An object of cost accounting to find out cost of a product or a service.	An object of management accounting is to make available various information to the management for planning and other activities
In cost accounting both past and present data are used.	In the normally data are used for future policies and planning.
Cost accounting having a narrow scope because mainly it determines the cost	Its scope is very wide, it includes financial account, cost account report to management etc.
Cost accounting is an old method.	Management accounting is a modern concept
In case of cost accounting, some principles and methods are adopted and from time to time same principles are used	In case of management accounting, for reporting to management no specific rule or principle is adopted.

c. Zero Working Capital Strategy

Type your answer here

Zero working capital is a situation in which there is no excess of current assets over current liabilities to be funded. The concept is used to drive down the level of investment required to operate a business, which can also increase the return on investment for shareholders. Management prefers low levels of working capital since working capital earns an extremely low rate of return. Some companies are now driving working capital to record low levels, so called zero working capital. There are two requirements to implement zero working capital i.e

(a) Demand based production where demand based organizations do everything only as they are demanded: fill customer orders, receive supplies, manufacture products and other functions are done only as needed.

		(b) Receivable and payable terms under which credit is granted to customers must be curtailed, while payment terms to suppliers must be extended. Ideally, cash should be received from customers before it is due for payment to suppliers. This essentially means that customer payments are directly funding the payments to suppliers. Zero working capital would call for a fine balancing act in Financial Management, and the success in this endeavour would get reflected in healthier bottom lines.	
	d.	Profit maximization as an objective of Financial Management.	
		Type your answer here Profit Maximization is the main objective of business because: (i) Profit acts as a measure of efficiency and (ii) It serves as a protection against risk. Arguments in favour of Profit Maximization : (i) When profit earning is the main aim of business the ultimate objective should be profit maximization. (ii) Future is uncertain. A firm should earn more and more profit to meet the future contingencies. (iii) The main source of finance for growth of a business is profit. Hence, profit maximization is required. (iv) Profit maximization is justified on the grounds of rationality as profits act as a measure of efficiency and economic prosperity. Arguments against Profit Maximization : (i) It leads to exploitation of workers and consumers. (ii) It Ignores the risk factors associated with profit. (iii) Profit in itself is a vague concept and means differently to different prople. (iv) It is narrow concept at the cost of social and moral obligations. Thus, profit maximization as an objective of Financial Management has been considered inadequate.	
	e.	Importance of cost of capital.	
		Type your answer here The Cost of Capital is very important in Financial Management and plays a crucial role in the following areas: (i) Capital budgeting decisions: The cost of capital is used for discounting cash flows under Net Present Value method for investment proposals. So, it is very useful in capital budgeting decisions. (ii) Capital structure decisions: An optimal capital is that structure at which the value of the firm is maximum and cost of capital is the lowest. So, cost of capital is crucial in designing optimal capital structure. (iii) Evaluation of final Performance**:** Cost of capital is used to evaluate the financial performance of top management. The actual profitably is compared with the actual cost of capital of funds and if profit is greater than the cost of capital the performance nay be said to be satisfactory. (iv) Other financial decisions: Cost of capital is also useful in making such other financial decisions as dividend policy, capitalization of profits, making the rights issue, etc.	
		Section D **You are required to answer all the questions in this section** **Instructions: Each question is followed by a space where you are required to type your answer.**	**12 Marks**

9

A company has a number of manually operated machines that were used to make a product that the firm has phased out of its operations. The products with long life cycles were considered company's "cash cows" but they were becoming a thing of the past. The product had predictably failed to keep up with a market that demanded more for less. Heavily dependent on manual machines, this product had also faced a number of issues due to more time taken to finish the products.

An older model of machine of the company had a history of crashes which led to a supply disruption of the product. This added to the woes of the product, and it lost its lead to its competitors who wasted no time in snapping up the customers. The revenue stream from the product soon became a trickle till it finally stopped in 2020, when the lockdowns due to Covid-19 sounded a death knell for the long-suffering product.

Now the company. is considering replacing a manually operated old machine with a fully automatic new machine. The old machine has been fully depreciated for tax purposes but has a book value of Rs.2,40,000 on 31st March 2021. The machine has begun causing problems with breakdowns and it cannot fetch more than Rs. 30,000 if sold in the market at present. It will have no realizable value after 10 years. The company has been offered Rs. 1,00,000 for the old machine as a trade-in on the new machine which has a price (before allowance for trade-in) of Rs. 4,50,000. The expected life of the new machine is 10 years with a salvage value of Rs. 35,000.

Further, the company follows a straight line depreciation method but for tax purpose, written down value method depreciation @ 7.5% is allowed.

You have been appointed as a financial advisor to the company recently. The Board members of the company have asked you to quantitatively support your observations and suggest to the company whether the new automatic machine should be bought, or the old equipment modified. Keep in mind, the older it gets, the higher the cost of maintenance is outdated, old manually operated equipment often results in wasted time and less productivity in the workplace.

Given below are the expected sales and costs from both old and new machine.

Particulars	Old Machine (Rs.)	New Machine (Rs.)
Sales	8,10,000	8,10,000
Material cost	1,80,000	1,26,250
Labour cost	1,35,000	1,10,000
Variable overhead	56,250	47,500
Fixed overhead	90,000	97,500
Depreciation	24000	41500
PBT	3,24,750	3,87,250
Tax@30%	97,425	1,16,175
PAT	2,27,325	2,71,075

From the above information, analyse whether the old machine should be replaced or not if the required rate of return is 10%? Ignore capital gain tax.

Given:

PV factor @10%.

Year	1	2	3	4	5	6	7	8	9	10
PVF	0.909	0.826	0.751	0.683	0.621	0.564	0.513	0.467	0.424	0.386

	a.	Calculate the Base for depreciation/ Cost of New Machine.	2

Type your answer here 3,50,000

Rough Work

Particulars	Amount (in Rs.)
Purchase price of new machine	4,50,000
Less: Sale price of old machine	1,00,000
TOTAL	3,50,000

b. Calculate NPV of cash flows . 4

Type your answer here 3,81,102.44

Rough Work

Calculation of NPV

Year	PVF @10 %	PBTD	Dep @7.5%	PBT	Tax @30%	Cash inflow	PV of cash Inflow
	1	2	3	4	5= (4) X 30%	6= (4)-(5)+(3)	(7) = (6) x (1)
1	0.909	80,000	26,250	53,750	16,125	63,875	58,062.38
2	0.826	80,000	24281.2	55,718.75	16,715.63	63,284.34	52,272.89
3	0.751	80,000	22,460.1	57,539.84	17,261.95	62,738.05	47,116.27
4	0.683	80,000	20,775.6	59,224.36	17,767.31	62,232.69	42,504.93
5	0.621	80,000	19,217.4	60,782.53	18,234.76	61,765.24	38,356.21
6	0.564	80,000	17,776.1	62,223.84	18,667.15	61,332.85	34,591.73
7	0.513	80,000	16,442.9	63,557.05	19,067.12	60,932.85	31,258.57
8	0.467	80,000	15,209.7	64,790.27	19,779.30	60,562.92	28,282.88
9	0.424	80,000	14,069.0	65,931.00	19,437.08	60,220.70	25,533.58
10	0.386	80,000	13,013.8	66,986.18	20,095.85	59,904.15	23,123
						NPV	3,81,102.44

10 The unforeseen pandemic of Covid-19 brought about quite a few changes in the consumption of the consumer goods in India. Millions of fitness and food videos shared on various social media platforms are a testament to this trend. This shift was also reflected in the home appliances that they purchased during the past year.

In addition to that, a momentous growth in the purchase of electronic devices such as laptops, mobiles and headphones among others during the past year was noticed. People also looked for more efficient devices as work-from-home became the new normal. The focus was shifted to e-learning also. As more and more people settled in their routines, they looked for automating their home appliances in a bid to save time. The demands for laptops and tablets in the past year have seen growth of nearly 200% on a pre and post lockdown basis. Office essentials such as printers have seen a 75% increase in searches for various kinds of printers (inkjet, ink tank and lasers).

The ABC company producing electronic products has three divisions viz. Division A, Division B and Division C. Each of which makes a different product: laptops, mobiles, cameras respectively . Due to unforeseen circumstances in the market, although two divisions are earning but the third division is not earning as per the expectations. So the company is thinking of closing down the third unit producing cameras. There is no possibility of reducing fixed cost. As a financial advisor of ABC company what will you suggest?

Particulars	Laptop	Mobiles	Camera
Sales	1,10,000	60,000	85,000
Direct material	12,000	6,000	12,000
Direct labour	5,500	6,000	22,500
Direct expenses	12,000	6,000	27,000
Fixed cost	26,000	13,000	26,000
	55,500	31,000	87,500

a. Prepare a statement showing contribution of all divisions before closing down division C. 3

Type your answer here

Particulars	Laptop	Mobiles	Camera	Total
Sales	1,10,000	60,000	85,000	2,55,000
Variable cost:				
Direct material	12,000	6,000	12,000	30,000
Direct labour	5,500	6,000	22,500	34,000
Direct expenses	12,000	6,000	27,000	45,000
Total variable cost	29,500	18,000	61,500	1,09,000
Contribution(sales-variable cost)	80,500	42,000	23,500	1,46,000

b. Prepare a statement showing contribution of all divisions after closing down division C. 3

Type your answer here

Particulars	Laptop	Mobile	Total
Sales	1,10,000	60,000	1,70,000
Variable cost:			
Direct material	12,000	6,000	18,000
Direct labour	5,500	6,000	11,500
Direct expenses	12,000	6,000	18,000
Total variable cost	29,500	18,000	47,500
Contribution(sales-variable cost)	80,500	42,000	1,22,500

END