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Theory + MCQs + Difficult Questions

WCM

COST OF CAPITAL

8K

40-50

Ch 6 - Leverage

7. **(a) The operating income of Hypothetical Ltd amounts to ₹1, 86,000. It pays 35% tax on its income. Its capital structure consists of the following:**

Particulars	₹
14% Debentures	5,00,000
15% Preference shares	1,00,000
Equity shares (₹100 each)	4,00,000

(i) Determine the firm's EPS.

(ii) Determine the percentage change in EPS associated with 30% change (both increase and decrease) in EBIT.

(iii) Determine the degree of financial leverage at the current level of EBIT.

(iv) What additional data do you need to compute operating as well as combined leverage?

Answer:

(a)

(i) Determination of EPS

Particulars	Amount (₹)
EBIT	1,86,000
Less interest (0.14 × ₹5,00,000)	70,000
EBT	1,16,000
Less taxes (0.35)	40,600
EAT	75,400
Less: Dividend on preference shares	15,000
Earnings available for equity holders	60,400
EPS (₹60,400 ÷ 4,000)	15.1

(ii) Change in EPS

Particulars	Change in EBIT (₹)	
	(+30%)	(-30%)
EBIT	2,41,800	1,30,200
Less interest	70,000	70,000
EBT	1,71,800	60,200
Less taxes (0.35)	60,130	21,070
EAT	1,11,670	39,130
Less: Dividends payable on preference shares	15,000	15,000
Earnings available for equity holders	96,670	24,130

(b) A firm's sales, variable costs and fixed cost amount to ₹75 lakh, ₹42 lakh and ₹6 lakh respectively. It has borrowed ₹45 lakh at 9% and its equity capital totals ₹55 lakhs.

(i) Calculate the firm's ROI.

(ii) Does it have favorable financial leverage?

(iii) If the firm belongs to an industry whose asset turnover is 3, does it have high or low asset leverage?

(iv) If the firm belongs to an industry whose asset turnover is 3, does it have high or low asset leverage?

(v) If the sales drop to ₹50 lakhs what will the new EBIT be?

(vi) At what level will the EBT of the firm equal to zero?

[7]

(b) (i) ROI = EBIT/Investment

EBIT = Sales – VC – FC

= ₹75 lakhs – ₹42 lakhs – ₹6 lakhs

= ₹27 lakhs

ROI = ₹27 lakhs / ₹100 lakh

= 27 %

(ii) Yes, the firm has favorable financial leverage as its ROI is higher than the interest on debt.

(iii) Asset turnover = Sales/Total Assets or Total Investments = ₹75lakhs/ ₹100 lakh = 0.75. It is lower than the industry average.

(iv) Operating Leverage $= \frac{\text{Sales} - \text{Variable Costs}}{\text{EBIT}} = \frac{5 \text{ lakh} - 42 \text{ lakh}}{27 \text{ lakh}} = 1.22$

Financial Leverage $= \frac{\text{EBIT}}{\text{EBIT} - \text{Interest}} = \frac{27 \text{ lakh}}{27 \text{ lakh} - 4.05 \text{ lakh}} = 1.18$

Combined Leverage $= \frac{\text{Sales} - \text{VC}}{\text{EBIT} - \text{Interest}} = \frac{33 \text{ lakh}}{22{,}95{,}000} = 1.44$

Alternatively, = OL × FL = 1.22 × 1.18 = 1.44

(v) EBIT at sales level of ₹50 lakhs

Particulars	Amount (₹)
Sales revenue	50 Lakhs
Less: Variable costs (₹50 lakhs × 0.56)	28 Lakhs
Less: Fixed costs	6 Lakhs
EBIT	16 lakhs

(vi) Zero EBT implies Break-Even Sales (BESR) = FC/CV ratio, CV ratio = ₹33 lakhs/₹75 lakhs = 44%. BESR = (₹6 lakhs + ₹4.05 lakhs)/0.44 = ₹22,84,091.

Confirmation Table

Particulars	Amount (₹)
Sales revenue	22,84,091
Less: Variable costs (0.56)	12,79,091
Less: Fixed costs (operating)	6,00,000
Less: Interest (additional fixed cost)	4,05,000
EBT	ZERO

ILLUSTRATION 3

A firm's details are as under:

Sales (@100 per unit)	*₹ 24,00,000*
Variable Cost	*50%*
Fixed Cost	*₹ 10,00,000*

It has borrowed ₹ 10,00,000 @ 10% p.a. and its equity share capital is ₹ 10,00,000 (₹ 100 each).

Consider tax @ 50 %.

CALCULATE:

(a) Operating Leverage

(b) Financial Leverage

(c) Combined Leverage

(d) Return on Investment

(e) If the sales increases by ₹ 6,00,000; what will the new EBIT?

ILLUSTRATION 5

Following are the selected financial information of A Ltd. and B Ltd. for the current Financial Year:

	A Ltd.	B Ltd.
Variable Cost Ratio	60%	50%
Interest	₹ 20,000	₹ 1,00,000
Operating Leverage	5	2
Financial Leverage	3	2
Tax Rate	30%	30%

You are required to FIND out:

(i) EBIT

(ii) Sales

(iii) Fixed Cost

(iv) Identify the company which is better placed with reasons based on leverages.

10. *The following details of a company for the year ended 31st March are given below:*

Operating leverage	*2:1*
Combined leverage	*2.5:1*
Fixed Cost excluding interest	*₹ 3.4 lakhs*
Sales	*₹ 50 lakhs*
8% Debentures of ₹ 100 each	*₹ 30.25 lakhs*
Equity Share Capital of ₹ 10 each	*34 lakhs*
Income Tax Rate	*30%*

CALCULATE:

(i) Financial Leverage

(ii) P/V ratio and Earning per Share (EPS)

(iii) If the company belongs to an industry, whose assets turnover is 1.5, does it have a high or low assets turnover?

(iv) At what level of sales, the Earning before Tax (EBT) of the company will be equal to zero?

12. *The following data have been extracted from the books of LM Ltd:*

Sales - ₹ 100 lakhs

Interest Payable per annum - ₹ 10 lakhs

Operating leverage - 1.2

Combined leverage - 2.16

You are required to calculate:

(i) The financial leverage,

(ii) Fixed cost and

(iii) P/V ratio

8.

A firm has sales of ₹ 75,00,000 variable cost is 56% and fixed cost is ₹ 6,00,000. It has a debt of ₹ 45,00,000 at 9% and equity of ₹ 55,00,000.

(i) What is the firm's ROI?

(ii) Does it have favourable financial leverage?

(iii) If the firm belongs to an industry whose capital turnover is 3, does it have a high or low capital turnover?

(iv) What are the operating, financial and combined leverages of the firm?

(v) If the sales is increased by 10% by what percentage EBIT will increase?

(vi) At what level of sales the EBT of the firm will be equal to zero?

(vii) If EBIT increases by 20%, by what percentage EBT will increase?

7.

The following information related to XL Company Ltd. for the year ended 31st March, 2016 are available to you:

Equity share capital of ₹ 10 each	*₹ 25 lakh*
11% Bonds of ₹ 1000 each	*₹ 18.5 lakh*
Sales	*₹ 42 lakh*
Fixed cost (Excluding Interest)	*₹ 3.48 lakh*
Financial leverage	*1.39*
Profit-Volume Ratio	*25.55%*
Income Tax Rate Applicable	*35%*

8. P.M

A firm has sales of ₹ 75,00,000 variable cost is 56% and fixed cost is ₹ 6,00,000. It has a debt of ₹ 45,00,000 at 9% and equity of ₹ 55,00,000.

(i) What is the firm's ROI?

(ii) Does it have favourable financial leverage?

(iii) If the firm belongs to an industry whose capital turnover is 3, does it have a high or low capital turnover?

(iv) What are the operating, financial and combined leverages of the firm?

(v) If the sales is increased by 10% by what percentage EBIT will increase?

(vi) At what level of sales the EBT of the firm will be equal to zero?

(vii) If EBIT increases by 20%, by what percentage EBT will increase?

Ch 5 - Capital Structure

ILLUSTRATION 7

Following data is available in respect of two companies having same business risk:

Capital employed = ₹2,00,000, EBIT = ₹30,000 and K_e = 12.5%

Sources	Levered Company (₹)	Unlevered Company (₹)
Debt (@10%)	1,00,000	Nil
Equity	1,00,000	2,00,000

An investor is holding 15% shares in levered company. CALCULATE the increase in annual earnings of investor if he switches his holding from Levered to Unlevered company.

ILLUSTRATION 10

Blue Ltd., an all equity financed company is considering the repurchase of ₹ 275 lakhs equity shares and to replace it with 15% debentures of the same amount. Current market value of the company is ₹ 1,750 lakhs with its cost of capital of 20%. The company's Earnings before Interest and Taxes (EBIT) are expected to remain constant in future years. The company also has a policy of distributing its entire earnings as dividend.

Assuming the corporate tax rate as 30%, you are required to CALCULATE the impact on the following on account of the change in the capital structure as per Modigliani and Miller (MM) Approach:

(i) Market value of the company

(ii) Overall Cost of capital

(iii) Cost of equity

ILLUSTRATION 11

Suppose that a firm has an all equity capital structure consisting of 1,00,000 ordinary shares of ₹ 10 per share. The firm wants to raise ₹ 2,50,000 to finance its investments and is considering three alternative methods of financing – (i) to issue 25,000 ordinary shares at ₹ 10 each, (ii) to borrow ₹ 2,50,000 at 8 per cent rate of interest, (iii) to issue 2,500 preference shares of ₹ 100 each at an 8 per cent rate of dividend. If the firm's earnings before interest and taxes after additional investment are ₹ 3,12,500 and the tax rate is 50 per cent, FIND the effect on the earnings per share under the three financing alternatives.

ILLUSTRATION 14

The following data are presented in respect of Quality Automation Ltd.:

	(₹)
Profit before interest and tax	*52,00,000*
Less: Interest on debentures @ 12%	*12,00,000*
Profit before tax	*40,00,000*
Less: Income tax @ 50%	*20,00,000*
Profit After tax	*20,00,000*
No. of equity shares (of ₹ 10 each)	*8,00,000*
EPS	*2.5*
PE Ratio	*10*
Market price per share	*25*

The company is planning to start a new project requiring a total capital outlay of ₹ 40,00,000. You are informed that a debt equity ratio (D/D+E) higher than 35%, pushes the K_e up to 12.5%, means reducing the PE ratio to 8 and rises the interest rate on additional amount borrowed to 14%. FIND OUT the probable price of share if:

(i) the additional funds are raised as a loan.

(ii) the amount is raised by issuing equity shares.

(Note: Retained earnings of the company is ₹ 1.2 crore)

8. *The following data relates to two companies belonging to the same risk class:*

Particulars	***A Ltd.***	***B Ltd.***
Expected Net Operating Income	*₹ 18,00,000*	*₹ 18,00,000*
12% Debt	*₹ 54,00,000*	-
Equity Capitalization Rate	-	*18*

REQUIRED:

(a) Determine the total market value, Equity capitalization rate and weighted average cost of capital for each company assuming no taxes as per M.M. Approach.

(b) Determine the total market value, Equity capitalization rate and weighted average cost of capital for each company assuming 40% taxes as per M.M. Approach.

Ch 4 - Cost of Capital

4. (a) From the Balance Sheet of X Ltd., prepare:

(A) Statement of changes in the Working Capital and

(B) Funds Flow Statement.

Liabilities	31st March		Assets	31st March	
	2023 (₹)	2024 (₹)		2023 (₹)	2024 (₹)
Equity Share Capital:	3,00,000	4,00,000	Goodwill	1,15,000	90,000
8% Preference share capital	1,50,000	1,00,000	Land & Buildings	2,00,000	1,70,000
P & L A/c	30,000	48,000	Plant	80,000	2,00,000
General Reserve	40,000	70,000	Debtors	1,60,000	2,00,000
Proposed Dividend	42,000	50,000	Stock	77,000	1,09,000
Creditors	55,000	83,000	Bills Receivable	20,000	30,000
Bills Payable	20,000	16,000	Cash in hand	15,000	10,000
Provision for Taxation	40,000	50,000	Cash at Bank	10,000	8,000
	6,77,000	8,17,000		6,77,000	8,17,000

Following is the additional information available.

i. Depreciation of ₹10,000 and ₹20,000 have been charged on Plant and Land and Building respectively in 2024.

ii. Interim dividend of ₹20,000 has been paid in 2024.

iii. Income tax of ₹35,000 has been paid in 2024.

Answer:

(a)

A. Calculation of changes in Working Capital

Current Asset	2023 (₹)	2024 (₹)
Debtors	1,60,000	2,00,000
Stock	77,000	1,09,000
Bills Receivable	20,000	30,000
Cash in hand	15,000	10,000
Cash at Bank	10,000	8,000
A: Total Current Assets	2,82,000	3,57,000

Current Liabilities	2023(₹)	2024(₹)
Creditors	55,000	83,000
Bill Payable	20,000	16,000
B: Total Current Liabilities	75,000	99,000
Working capital (A-B)	**2,07,000**	**2,58,000**

Increase in working capital ₹2, 58,000 – ₹2, 07,000 = ₹51,000

B. Funds Flow Statement

Sources	Amount (₹)	Application	Amount (₹)
Funds from Operations	2,30,000	Purchases of Plant	1,30,000
Sale proceeds of Land & Building	10,000	Increase in Working Capital	51,000
Issue of Equity Share Capital	1,00,000	Tax Paid	35,000
		Redemption of Preference Share Capital	50,000
		Proposed Dividend	42,000
		Interim Dividend paid	20,000
		Preference Dividend paid	12,000
	3,40,000		3,40,000

(b) Asianol Ltd. has the following Capital Structure:

	₹ (in Lakhs)
Equity Share Capital (10 lakhs shares)	**100**
12% Preference Share Capital (10,000 shares)	**10**
Retained Earnings	**120**
14% Debentures (70,000 Debentures)	**70**
14 % Term Loan	**100**
	400

The market price per equity share is ₹25. The next expected dividend per share is ₹2 and is expected to grow at 8%. The preference shares are redeemable after 7 years at par and are currently quoted at ₹75 per share. Debentures are redeemable after 6 years at par and their current market quotation is ₹90 per debenture. The tax rate applicable to the firm is 50%.

Calculate WACC under Book value method and Market value method. [7]

(b)

(i) Under Book Value Method

1. Cost of Equity Shares (k_e)

$$k_e = (D1 \div P0 \times 100) + g$$
$$= (2 \div 25 \times 100) + 8\%$$
$$= 16\%$$

2. Cost of Preference Shares (k_p)

$$K_p = PD + (RV-NP)/N \div RV+NP/2 \times 100$$
$$K_p = [12 + (100 - 75)/7] \div (100+75/2) \times 100$$
$$= 17.8\%$$

3. Cost of Debentures (k_d)

$k_d = [I\ (1\text{-}t)+((RV-NP)/n)] \div (RV+NP)/2$

$k_d = [14(1\text{-}.5) + (100 - 90)/6 \div (100 + 90/2$

$= 9.13\%$

4. Cost of Term Loan (k_d)

k_d = Interest $(1 - t)$

$= 14\% (1 - 0.5)$

$= 7\%$

Computation of WACC of Asianol Ltd.

(Weights under Book Value)

Sources of Finance	Book-value (in ₹lakhs)	Weight Proportion	After Tax cost of capital	WACC (%)
Equity share capital	100	0.250	16.00%	4.000
12% Preference share capital	10	0.025	17.80%	0.446
Retained earnings	120	0.300	16.00%	4.800
14% Debentures	70	0.175	9.31 %	1.63
14% Term Loan	100	0.250	7.00%	1.750
Total	400	1.000		12.63

Therefore, WACC under book value is 12.63%.

(ii) Under Market Value Method

Total Market value of Equity Shares = 10,00,000 shares@ ₹25

= ₹2,50,00,000

Ratio between equity shares and retained earnings

= 100:120

= 5:6

Market value of equity = ₹2,50,00,000 × 5/11

= ₹1,13,63,637

Market value of retained earnings = ₹2,50,00,000 × 6/11

= ₹1,36,36,363

Computation of WACC of Asianol Ltd.

(Weights under Market Value)

Sources of Finance	Market-value (in ₹)	Weight Proportion	After Tax Cost of capital	WACC (%)
Equity share capital	1,13,63,637	0.2700	16.00%	4.32
12% Preference share capital	7,50,000	0.0178	17.80%	0.32
Retained earnings	1,36,36,363	0.3243	16.00%	5.20
14% Debentures	63,00,000	0.1498	9.31%	1.39
14% Term Loan	1,00,00,000	0.2381	7.00%	1.67
Total	4,20,50,000	1.000		12.89

Therefore, WACC under market value is 12.89%.

ILLUSTRATION 5

RBML is proposing to sell a 5-year bond of ₹ 5,000 at 8 per cent rate of interest per annum. The bond amount will be amortised equally over its life. CALCULATE the bond's present value for an investor if he expects a minimum rate of return of 6 per cent?

ILLUSTRATION 17

CALCULATE the WACC using the following data by using:

(a) Book value weights

(b) Market value weights

The capital structure of the company is as under:

	(₹)
Debentures (₹ 100 per debenture)	*5,00,000*
Preference shares (₹ 100 per share)	*5,00,000*
Equity shares (₹ 10 per share)	*10,00,000*
	20,00,000

The market prices of these securities are:

Debentures	*₹ 105 per debenture*
Preference shares	*₹ 110 per preference share*
Equity shares	*₹ 24 per equity share*

Additional information:

(1) ₹ 100 per debenture redeemable at par, 10% coupon rate, 4% floatation costs, 10-year maturity.

(2) ₹ 100 per preference share redeemable at par, 5% coupon rate, 2% floatation cost and 10-year maturity.

(3) Equity shares has ₹ 4 floatation cost and market price of ₹ 24 per share.

The next year expected dividend is ₹ 1 with annual growth of 5%. The firm has practice of paying all earnings in the form of dividend.

Corporate tax rate is 30%.Use YTM method to calculate cost of debentures and preference shares.

4. *Masco Limited wishes to raise additional finance of ₹ 10 lakhs for meeting its investment plans. It has ₹ 2,10,000 in the form of retained earnings available for investment purposes. Further details are as following:*

(1)	Debt / Equity mix	3:7
(2)	Cost of debt:	
	Upto ₹ 1,80,000	10% (before tax)
	Beyond ₹ 1,80,000	16% (before tax)
(3)	Earnings per share	₹ 4
(4)	Dividend pay out	50% of earnings
(5)	Expected growth rate of dividend	10%
(6)	Current market price per share	₹ 44
(7)	Tax rate	50%

You are required to:

(a) *DETERMINE the pattern for raising the additional finance.*

(b) *DETERMINE the post-tax average cost of additional debt.*

(c) *DETERMINE the cost of retained earnings and cost of equity.*

(d) *COMPUTE the overall weighted average after tax cost of additional finance.*

5. *DETERMINE the cost of capital of Best Luck Limited using the book value (BV) and market value (MV) weights from the following information:*

Sources	**Book Value (₹)**	**Market Value (₹)**
Equity shares	*1,20,00,000*	*2,00,00,000*
Retained earnings	*30,00,000*	-
Preference shares	*36,00,000*	*33,75,000*
Debentures	*9,00,000*	*10,40,000*

Additional information:

I. *Equity: Equity shares are quoted at ₹130 per share and a new issue priced at ₹125 per share will be fully subscribed; flotation costs will be ₹ 5 per share.*

II. *Dividend: During the previous 5 years, dividends have steadily increased from ₹ 10.60 to ₹ 14.19 per share. Dividend at the end of the current year is expected to be ₹ 15 per share.*

III. *Preference shares: 15% Preference shares with face value of ₹ 100 would realise ₹105 per share.*

IV. *Debentures: The company proposes to issue 11-year 15% debentures but the yield on debentures of similar maturity and risk class is 16%; flotation cost is 2%.*

V. *Tax: Corporate tax rate is 35%.Ignore dividend tax.*

Floatation cost would be calculated on face value.

6. *Kalyanam Ltd. has an operating profit of ₹ 34,50,000 and has employed Debt which gives total Interest Charge of ₹ 7,50,000. The firm has an existing Cost of Equity and Cost of Debt as 16% and 8% respectively. The firm has a new proposal before it, which requires funds of ₹ 75 Lakhs and is expected to bring an additional profit of ₹ 14,25,000. To finance the proposal, the firm is expecting to issue an additional debt at 8% and will not be issuing any new equity shares in the market. Assume no tax culture.*

You are required to CALCULATE the Weighted Average Cost of Capital (WACC) of Kalyanam Ltd.:

(i) Before the new Proposal

(ii) After the new Proposal.

Compulsory 5 marks

Ch 3 - Ratio Analysis

3. (a) From the following information, prepare a summarized Statement of Assets and Liabilities as on 31st March, 2025:

(i) Working Capital	**₹1,20,000**
(ii) Reserves & Surplus	**₹80,000**
(iii) Bank Overdraft	**₹20,000**
(iv) Proprietary Ratio	**0.75**
(v) Current Ratio	**2.50**
(vi) Liquid Ratio	**1.50**

Answer:

3. (a) Working Notes:

(i) Current Ratio = Current Assets (CA)/Current Liabilities(CL)

= 2.50 i.e., 2.5:1.0 Working Capital = ₹1, 20, 000

Current Assets / Current Liabilities = 2.5

CA = 2.5 CL

CA – CL = 1, 20,000

2.5 CL – CL = 1, 20,000

1.5 CL = 1, 20,000

CL = 1, 20,000

1.5 = ₹80,000

CA = 2.5 CL

= 2.5 × 80,000

= ₹2, 00,000

Note:

Bank Overdraft = ₹20,000 Other

CL = ₹60,000 (balancing figure)

CL = ₹80,000

(ii) Liquid Ratio = Quick Assets/CL (Excluding Overdraft)

= 1.50 i.e., 1.50:1.00

1.0 - ₹60,000

1.5 -?

(1.5/1.00) × 60,000 = ₹90,000 (Quick Assets)

Stock = CA - Quick Assets

= 2, 00,000 – 90,000 = ₹1, 10,000

(iii) Proprietary Ratio = (Fixed Assets/ Proprietary Funds) = 0.75 i.e.,

Working capital/ Proprietary Funds = 0.25

Proprietary Funds = (1/0.25) × 1, 20,000 = ₹4, 80,000

Less: Reserves & Surplus = ₹80,000

Share Capital = ₹4, 00,000

(iv) Fixed Assets = 4, 80,000 × 0.75 = ₹3, 60,000.

Summarized Statement of Assets and Liabilities as on 31st March, 2025

Liabilities	₹	Assets	₹
Share capital	4,00,000	Fixed Assets	3,60,000
Reserves & Surplus	80,000	Current Assets :	
Current Liabilities:		Stock 1,10,000	
Bank Overdraft 20,000		Quick Assets 90,000	2,00,000
Other C.L 60,000	80,000		
Total	5,60,000	Total	5,60,000

3) **(a) The following are the ratios relating to the activities of X Ltd.**

Debtors' velocity (months)	**3**
Stock velocity (months)	**8**
Creditors' velocity (months)	**2**
Gross profit ratio (%)	**25**

Gross profit for the current year ended December, 31st, 2024 amounts to ₹4,00,000. Closing stock of the year is ₹10,000 above the opening stock. Bills receivables amount to ₹25,000 and bills payable to ₹10,000. Find out(I) Sales, (II) Closing Stock, and (III) Sundry Creditors. **[7]**

Answer:

(a)

I. **Determination of sales:**

Sales $= \frac{₹\,4,00,000}{25} \times 100 = ₹16,00,000$

II. **Determination of sundry debtors:**

Debtors' velocity is 3 months. In other words, debtors collection period is 3 months, or debtors' turnover ratiois 4. Assuming all sales to be credit sales and debtors' turnover ratio being calculated on the basis of year-endfigures.

Debtors' turnover ratio $= \frac{Credit Sales}{Closing Debtors' + Bills Receivables}$

Closing debtors + Bills Receivables $= \frac{Credit\ Sales}{\text{Debtors' turnover ratio}}$

$= \frac{₹\,16,00,000}{4} = ₹4,00,000$

Closing Debtors = ₹4,00,000 – ₹25,000 = ₹3,75,000

III. **Determination of Closing Stock:**

Stock velocity of 8 months signifies that the inventory holding period is 8 months, stock turnover ratio is 1.5 i.e., (12 months / 8).

$$\text{Stock Turnover} = \frac{Cost\ of\ goods\ sold (Sales - Gross\ Profit)}{Average\ Stock} = \frac{₹\ 12,00,000}{Average\ Stock} = 1.5$$

$$\text{Average Stock} = \frac{₹\ 12,00,000}{1.5} = ₹\ 8,\ 00,000$$

Closing Stock – Opening Stock = ₹10,000.....(i)

$$\frac{Closing\ Stock + opening\ Stock}{2} = ₹8,\ 00,000 \ldots\ldots\ldots\ldots\ldots\ldots \text{(ii)}$$

Closing Stock + Opening stock = ₹16, 00,000 .....(iii)

Subtracting (i) from (iii) we have,

2 Opening Stock = ₹15, 90,000

Opening Stock = ₹7, 95,000

Therefore, Closing Stock = ₹8, 05,000

IV. **Determination of Sundry Creditors:**

Creditors' velocity of 2 months signifies that the credit payment period is 2 months. In other words, creditors' turnover ratio is 6 (i.e., 12 months/2). Assuming all purchases to be credit purchases and creditors turnoveris based on year- end figure.

$$\text{Creditors turnover ratio} = \frac{Credit\ Purchase}{Creditors' + Bills\ payables}$$

$$6 = \frac{₹\ 12,00,000}{Creditors + 10,000}$$

or,Creditors + ₹10,000 = $\frac{₹\ 12,00,000}{6}$

or, Creditors = ₹2,01,667 – ₹10,000

Therefore, Creditors = ₹1,91,667

Credit purchases are calculated as follows:

Cost of Goods Sold = Opening Stock + Purchases + Closing Stock

or, ₹12,00,000 = ₹7,95, 000 + Purchases – ₹8,05,000

or, ₹12,00,000 + ₹10,000 = Purchases

or, ₹12,10,000 = Purchases (credit)

ILLUSTRATION 4

From the following ratios and information given below, PREPARE Trading Account, Profit and Loss Account and Balance Sheet of Aebece Company:

Fixed Assets	*₹ 40,00,000*
Closing Stock	*₹ 4,00,000*
Stock turnover ratio	*10*
Gross profit ratio	*25 percent*
Net profit ratio	*20 percent*
Net profit to capital	*1/5*
Capital to total liabilities	*1/2*
Fixed assets to capital	*5/4*
Fixed assets/Total current assets	*5/7*

5. *Using the following information, PREPARE the balance sheet:*

Long-term debt to net worth	*0.5*
Total asset turnover	*2.5*
Average collection period`	*18 days*
Inventory turnover	*9*
Gross profit margin	*10%*
Acid-test ratio	*1*

**Assume a 360-day year and all sales on credit.*

	₹		₹
Cash	*?*	*Notes and payables*	*1,00,000*
Accounts receivable	*?*	*Long-term debt*	*?*
Inventory	*?*	*Common stock*	*1,00,000*
Plant and equipment	*?*	*Retained earnings*	*1,00,000*
Total assets	*?*	*Total liabilities and equity*	*?*

7. *Manan Pvt. Ltd. gives you the following information relating to the year ending 31st March, 2023:*

(1)	*Current Ratio*	*2.5 : 1*
(2)	*Debt-Equity Ratio*	*1 : 1.5*
(3)	*Return on Total Assets (After Tax)*	*15%*
(4)	*Total Assets Turnover Ratio*	*2*
(5)	*Gross Profit Ratio*	*20%*
(6)	*Stock Turnover Ratio*	*7*
(7)	*Net Working Capital*	*₹ 13,50,000*
(8)	*Fixed Assets*	*₹ 30,00,000*
(9)	*1,80,000 Equity Shares of*	*₹ 10 each*
(10)	*60,000, 9% Preference Shares of*	*₹ 10 each*
(11)	*Opening Stock*	*₹ 11,40,000*

You are required to CALCULATE:

(a) Quick Ratio

(b) Fixed Assets Turnover Ratio

(c) Proprietary Ratio

(d) Earnings per Share

9. *Following information relates to Temer Ltd.:*

Debtors Velocity	*3 months*
Creditors Velocity	*2 months*
Stock Turnover Ratio	*1.5*
Gross Profit Ratio	*25%*
Bills Receivables	*₹ 25,000*
Bills Payables	*₹ 10,000*
Gross Profit	*₹ 4,00,000*
Fixed Assets turnover Ratio	*4*

Closing stock of the period is ₹ 10,000 above the opening stock.

DETERMINE:

(i) Sales and cost of goods sold

(ii) Sundry Debtors

(iii) Sundry Creditors

(iv) Closing Stock

(v) Fixed Assets

Ch 7 - Investment Decisions

(b) Modern Enterprises Ltd. is considering the purchase of a new computer system for its research and development division, which would cost ₹35 lakh. The operation and maintenance costs (excluding depreciation) are expected to be ₹7 lakh per annum. It is estimated that the useful life of the system would be 6 years, at the end of which the disposal value is expected to be ₹1 lakh.

The tangible benefits expected from the system in the form of reduction in design and draftsmanship costs would be ₹12 lakh per annum. The disposal ofused drawing office equipment and furniture initially is anticipated to net ₹9 lakh.

As capital expenditure in research and development, the proposal would attract a 100% write-off for tax purposes. The gains arising from disposal of used assets may be considered tax free. The effective tax rate is 35%. The average cost of capital of the company is 12%.

After appropriate analysis of cash flows, advise the company of the financial viability of the proposal. Ignore tax on salvage value. [7]

(b)

Assessment of Financial Viability of proposal	**(₹ in lakh)**
Incremental cash outflows	
Cost of new computer system	35
Less: Sale proceeds from drawing office equipment and furniture	9
	26
Incremental CFAT and NPV:	
(a) Cost savings (years 1–6)	
Reduction in design and draftsmanship costs	12
Less: Operation and maintenance costs	7
Cost savings (earnings) before taxes	5
Less: Taxes (0.35)	1.75
Earnings after taxes (CFAT)	3.25
(×) PV factor of annuity for 6 years (0.12)	× 4.111
Total PV of cost savings	13.36
(b) Tax savings on account of depreciation	
Cost of new computer system (₹35 lakhs × 0.35)	12.25
(×) PV factor for year 1	× 0.892
Total PV	9.93
(c) Terminal salvage value at the end of year 6 (₹1 lakh × 0.507)	**0.507**
(d) Gross PV of CFAT [(a) + (b) + (c)]	**24.797**
Less: Cash outflows	**26.000**
NPV	**(1.203)**

Recommendation: Since NPV is negative, the proposal is not financially viable.

5. (a) **Electromatic Excellers Ltd. specialise in the manufacture of novel transistors. They have recently developed technology to design a new radio transistor capable of being used as an emergency lamp also. They are quite confident of selling all the 8,000 units that they would be making in a year. The capital equipment that would be required will cost ₹25 lakhs. It will have an economic life of 4 years and no significant terminal salvage value.**

During each of the first four years promotional expenses are planned as under:

1 st Year	1	2	3	4
Advertisement	1,00,000	75,000	60,000	30,000
Others	50,000	75,000	90,000	1,20,000
Variable cost of production and selling expenses: ₹250 per unit				

Additional fixed operating costs incurred because of this new product are budgeted at ₹75,000 per year.

The company's profit goals call for a discounted rate of return of 15% after taxes on investments on new products. The income tax rate on an average works out to 40%. You can assume that the straight line method of depreciation will be used for tax and reporting. Assess the initial selling price per unit of the product that may be fixed for obtaining the desired rate of return on investment. Present value of annuity of ₹1 received or paid in a steady stream throughout 4 years in the future at 15% is 3.0079. **[7]**

5. **(a)** Computation of selling price in order to get a return of 15%.

Let 'x' be the selling price, then sales will be 8000x

. Sales	8000x
Variable Cost [8000 × 250]	20,00,000
Contribution	8000x – 20,00,000
Fixed Cost [Adv. + Others]	-1,50,000
Additional Fixed Cost	-75,000
Depreciation [25,00,000 ÷ 4]	-6,25,000
	8000x – 28,50,000
Tax @ 40%	-3200x – 11,40,000
	4800x – 17,10,000
(+) Depreciation	6,25,000
CIF	4800x – 10,85,000

CIF for a period of 4 years and the required return on investment is 15% CUM

CIF for Annuity factor @ 15% (given) = 3.0079 P.V. of CIF Disc @ 15% for 4 years must be atleast = 25,00,000 $\therefore$ $3.0079 \times (4800x - 10,85,000) = 25,00,000$

$14438x - ₹32,63,572 = 25,00,000$

$14438x = ₹25,00,000 + 32,63,572$

$14438x = ₹57,63,572$

$x = ₹399.19$

Selling price must be at least ₹399.19 = ₹400.

(b) Modern Enterprises Ltd. is considering the purchase of a new computer system for its research and development division, which would cost ₹35 lakh. The operation and maintenance costs (excluding depreciation) are expected to be ₹7 lakh per annum. It is estimated that the useful life of the system would be 6 years, at the end of which the disposal value is expected to be ₹1 lakh.

The tangible benefits expected from the system in the form of reduction in design and draftsmanship costs would be ₹12 lakh per annum. The disposal of used drawing office equipment and furniture initially is anticipated to net ₹9 lakh.

As capital expenditure in research and development, the proposal would attract a 100% write-off for tax purposes. The gains arising from disposal of used assets may be considered tax free. The effective tax rate is 35%. The average cost of capital of the company is 12%.

After appropriate analysis of cash flows, advise the company of the financial viability of the proposal. Ignore tax on salvage value. [7]

(b)

Assessment of Financial Viability of proposal	(₹ in lakh)
Incremental cash outflows	
Cost of new computer system	35
Less: Sale proceeds from drawing office equipment and furniture	9
	26
Incremental CFAT and NPV:	
(a) Cost savings (years 1–6)	
Reduction in design and draftsmanship costs	12
Less: Operation and maintenance costs	7
Cost savings (earnings) before taxes	5

Less: Taxes (0.35)	1.75
Earnings after taxes (CFAT)	3.25
(×) PV factor of annuity for 6 years (0.12)	× 4.111
Total PV of cost savings	13.36
(b) Tax savings on account of depreciation	
Cost of new computer system (₹35 lakhs × 0.35)	12.25
(×) PV factor for year 1	× 0.892
Total PV	9.93
(c) Terminal salvage value at the end of year 6 (₹1 lakh × 0.507)	0.507
(d) Gross PV of CFAT [(a) + (b) + (c)]	24.797
Less: Cash outflows	26.000
NPV	(1.203)

Recommendation: Since NPV is negative, the proposal is not financially viable.

ILLUSTRATION 17

X Limited is considering purchasing of new plant worth ₹ 80,00,000. The expected net cash flows after taxes and before depreciation are as follows:

Year	Net Cash Flows (₹)
1	14,00,000
2	14,00,000
3	14,00,000
4	14,00,000
5	14,00,000
6	16,00,000
7	20,00,000
8	30,00,000
9	20,00,000
10	8,00,000

The rate of cost of capital is 10%.

You are required to CALCULATE:

(i) Pay-back period

(ii) Net present value at 10 discount factor

(iii) Profitability index at 10 discount factor

(iv) Internal rate of return with the help of 10% and 15% discount factor

The following present value table is given for you:

Year	Present value of ₹ 1 at 10% discount rate	Present value of ₹ 1 at 15% discount rate
1	0.909	0.87
2	0.826	0.756
3	0.751	0.658
4	0.683	0.572
5	0.621	0.497

ILLUSTRATION 18

HMR Ltd. is considering replacing a manually operated old machine with a fully automatic new machine. The old machine had been fully depreciated for tax purpose but has a book value of ₹2,40,000 on 31st March . The machine has begun causing problems with breakdowns and it cannot fetch more than ₹30,000 if sold in the market at present. It will have no realizable value after 10 years. The company has been offered ₹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 ₹4,50,000. The expected life of new machine is 10 years with salvage value of ₹35,000.

Further, the company follows straight line depreciation method but for tax purpose, written down value method depreciation @ 7.5% is considering that this is the only machine in the block of assets.

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

	Old machine (₹)	**New machine (₹)**
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	24,000	41,500
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 required rate of return is 10%? Ignore capital gain tax.

Practical Problems

1. *Following data has been available for a capital project:*

Annual cash inflows	*₹ 1,00,000*
Useful life	*4 years*
Salvage value	*0*
Internal rate of return	*12%*
Profitability index	*1.064*

You are required to CALCULATE the following for this project:

(i) Cost of project

(ii) Cost of capital

(iii) Net present value

(iv) Payback period

PV factors at different rates are given below:

Discount factor	12%	11%	10%	9%
1 year	0.893	0.901	0.909	0.917
2 year	0.797	0.812	0.826	0.842
3 year	0.712	0.731	0.751	0.772
4 year	0.636	0.659	0.683	0.708

5. *Cello Limited is considering buying a new machine which would have a useful economic life of five years, a cost of ₹ 1,25,000 and a scrap value of ₹ 30,000, with 80 per cent of the cost being payable at the start of the project and 20 per cent at the end of the first year. The machine would produce 50,000 units per annum of a new product with an estimated selling price of ₹ 3 per unit. Direct costs would be ₹ 1.75 per unit and annual fixed costs, including depreciation calculated on a straight- line basis, would be ₹ 40,000 per annum.*

In the first year and the second year, special sales promotion expenditure, not included in the above costs, would be incurred, amounting to ₹ 10,000 and ₹ 15,000 respectively.

CALCULATE NPV of the project for investment appraisal, assuming that the company's cost of capital is 10 percent.

7. *Alley Pvt. Ltd. is planning to invest in a machinery that would cost ₹ 1,00,000 at the beginning of year 1. Net cash inflows from operations have been estimated at ₹ 36,000 per annum for 3 years. The company has two options for smooth functioning of the machinery - one is service, and another is replacement of parts. If the company opts to service a part of the machinery at the end of year 1 at ₹ 20,000, in such a case, the scrap value at the end of year 3 will be ₹ 25,000. However, if the company decides not to service the part, then it will have to be replaced at the end of year 2 at ₹ 30,800, and in this case, the machinery will work for the 4th year also and get operational cash inflow of ₹ 36,000 for the 4th year. It will have to be scrapped at the end of year 4 at ₹ 18,000.*

Assuming cost of capital at 10% and ignoring taxes, DETERMINE the purchase of this machinery based on the net present value of its cash flows.

If the supplier gives a discount of ₹ 10,000 for purchase, what would be your decision?

Note: The PV factors at 10% are:

Year	*0*	*1*	*2*	*3*	*4*	*5*	*6*
PV Factor	*1*	*0.9091*	*0.8264*	*0.7513*	*0.6830*	*0.6209*	*0.5645*

9. *XYZ Ltd. is planning to introduce a new product with a project life of 8 years. Initial equipment cost will be ₹ 3.5 crores. Additional equipment costing ₹ 25,00,000 will be purchased at the end of the third year from the cash inflow of this year. At the end of 8 years, the original equipment will have no resale value, but additional equipment can be sold for ₹ 2,50,000. A working capital of ₹ 40,00,000 will be needed and it will be released at the end of eighth year. The project will be financed with sufficient amount of equity capital.*

The sales volumes over eight years have been estimated as follows:

Year	1	2	3	4 – 5	6 – 8
Units per year	72,000	1,08,000	2,60,000	2,70,000	1,80,000

A sales price of ₹ 240 per unit is expected and variable expenses will amount to 60% of sales revenue. Fixed cash operating costs will amount ₹ 36,00,000 per year. The loss of any year will be set off from the profits of subsequent two years. The company is subject to 30 per cent tax rate and considers 12 per cent to be an appropriate after-tax cost of capital for this project. The company follows straight line method of depreciation.

CALCULATE the net present value of the project and advise the management to take appropriate decision.

The PV factors at 12% are

Year	1	2	3	4	5	6	7	8
PV Factor	0.893	0.797	0.712	0.636	0.567	0.507	0.452	0.404

11. *Xavly Ltd. has a machine which has been in operation for 3 years. The machine has a remaining estimated useful life of 5 years with no salvage value in the end. Its current market value is ₹2,00,000. The company is considering a proposal to purchase a new model of machine to replace the existing machine. The relevant information is as follows:*

	Existing Machine	**New Machine**
Cost of machine	*₹3,30,000*	*₹10,00,000*
Estimated life	*8 years*	*5 years*
Salvage value	*Nil*	*₹40,000*
Annual output	*30,000 units*	*75,000 units*
Selling price per unit	*₹15*	*₹15*
Annual operating hours	*3,000*	*3,000*
Material cost per unit	*₹4*	*₹4*
Labour cost per hour	*₹40*	*₹70*
Indirect cash cost per annum	*₹50,000*	*₹65,000*

The company uses written down value of depreciation @ 20% and it has several other machines in the block of assets. The Income tax rate is 30 per cent and Xavly Ltd. does not make any investment, if it yields less than 12 per cent.

ADVISE Xavly Ltd. whether the existing machine should be replaced or not.

PV factors @12%:

Year	*1*	*2*	*3*	*4*	*5*
PVF	*0.893*	*0.797*	*0.712*	*0.636*	*0.567*

Question 20

P.M.

PR Engineering Ltd. is considering the purchase of a new machine which will carry out some operations which are at present performed by manual labour. The following information related to the two alternative models – 'MX' and 'MY' are available:

	Machine 'MX'	Machine 'MY'
Cost of Machine	₹ 8,00,000	₹ 10,20,000
Expected Life	6 years	6 years
Scrap Value	₹ 20,000	₹ 30,000

Estimated net income before depreciation and tax:

Year	₹	₹
1	2,50,000	2,70,000
2	2,30,000	3,60,000
3	1,80,000	3,80,000
4	2,00,000	2,80,000
5	1,80,000	2,60,000
6	1,60,000	1,85,000

Corporate tax rate for this company is 30 percent and company's required rate of return on investment proposals is 10 percent. Depreciation will be charged on straight line basis.

You are required to:

(i) Calculate the pay-back period of each proposal.

(ii) Calculate the net present value of each proposal, if the P.V. factor at 10% is – 0.909, 0.826, 0.751, 0.683, 0.621 and 0.564.

(iii) Which proposal you would recommend and why?

Scientific Research

100%. P&L

CMA - Inter

NPV = 0

Q.11. A company is considering the purchase of a new computer system for its Research and Development Division, which would cost ₹ 35 lakhs. The operation and maintenance cost (excluding depreciation) are expected to be ₹ 7 lakhs p.a. The estimated life of the system is 6 years.

The system will result in reduction in design and draughtsman-ship cost to the extent of ₹ 12 lakhs annually. Also, the disposal of used drawing office equipment and furniture is anticipated to realize ₹ 9,00,000. Its book value is Nil and there is no tax on capital profit.

Sec. 35 (Scientific Research) INCOME TAX

The capital expenditure would attract 100% write-off in the first year for tax purposes. The company's effective tax rate is 50%. The cost of capital is 12%. After appropriate analysis of cash flows, advise the company regarding

Ch 9 Unit 1 - Working Cap Mgt.

6. (a) From the following projections of XYZ Ltd for the next year, you are required to work out the working capital (WC) required by the company.

Annual sales	**14,40,000**
Cost of production including depreciation, ` 120000	**12,00,000**
Raw material purchases	**7,05,000**
Monthly expenses	**30,000**
Anticipated opening stock of raw materials	**1,40,000**
Anticipated closing stock of raw materials	**1,25,000**
Inventory norms:	
Raw material (month)	**2**
Work-in-progress (days)	**15**
Finished goods (month)	**1**

The firm enjoys a credit of 15 days on its purchases, and allows 1 month's credit on its supplies. The company has received an advance of ₹15,000 on sales orders.

You may assume that production is carried on evenly throughout the year, and the minimum cash balance desired to be maintained is ₹10,000. [7]

6. (a)

Statement showing determination of net working capital (NWC)	(₹)	(₹)
(A) Current assets:		
Cash balance		10,000
Inventories:		
Raw materials: Opening stock	1,40,000	
Add purchases	7,05,000	
Less closing stock	1,25,000	
Annual consumption	7,20,000	
Two months requirements = (₹720000 × 2 / 12)		1,20,000
Work-in-process (yearly cost of production excluding dep.) : (₹12,00,000 – ₹1,20,000) [₹10,08,000* × 1)/(2 × 12)]		45,000
Finished goods (₹10,80,000)/12		90,000
Debtors (₹10,80,000)/12		90,000**
Total		3,55,000
(B) Current liabilities:		
Trade creditors (₹7,05,000 ×1 / 2 × 1 / 12)		29,375
Advances received from debtors		15,000
Total		**44,375**
Not Working Capital (A – B)		3,10,625

*[₹7, 20,000 + ₹3, 60,000 (monthly expenditure, ₹30,000 × 12)]

**It is assumed that there is neither a opening nor closing stock of finished goods and, therefore, cost of sales is ₹10, 80,000, excluding depreciation.

(b) Modern Enterprises Ltd. is considering the purchase of a new computer system for its research and development division, which would cost ₹35 lakh. The operation and maintenance costs (excluding depreciation) are expected to be ₹7 lakh per annum. It is estimated that the useful life of the system would be 6 years, at the end of which the disposal value is expected to be ₹1 lakh.

The tangible benefits expected from the system in the form of reduction in design and draftsmanship costs would be ₹12 lakh per annum. The disposal of used drawing office equipment and furniture initially is anticipated to net ₹9 lakh.

As capital expenditure in research and development, the proposal would attract a 100% write-off for tax purposes. The gains arising from disposal of used assets may be considered tax free. The effective tax rate is 35%. The average cost of capital of the company is 12%.

After appropriate analysis of cash flows, advise the company of the financial viability of the proposal. Ignore tax on salvage value. **[7]**

(b) Statement showing the Evaluation of Debtors Policies (Total Approach)

Particulars	Present Policy 30 days (₹)	Proposed Policy A 40 days (₹)	Proposed Policy B 50 days (₹)	Proposed Policy C 60 days (₹)	Proposed Policy D 75 days (₹)
Expected Profit					
(a) Credit Sales	6,00,000	6,30,000	6,48,000	6,75,000	6,90,000
(b) Total Cost other than Bad Debts					
(i) Variable Costs [Sales × ₹2/₹3]	4,00,000	4,20,000	4,32,000	4,50,000	4,60,000
(ii) Fixed Costs	50,000	50,000	50,000	50,000	50,000
	4,50,000	4,70,000	4,82,000	5,00,000	5,10,000
(c) Bad Debts	6,000	9,450	12,960	20,250	27,600
(d) Expected Profit [(a) - (b)-(c)]	1,44,000	1,50,550	1,53,040	1,54,750	1,52,400
Opportunity Cost of Investments in Receivables	7,500	10,444	13,389	16,667	21,250

Recommendation: The Proposed Policy A (i.e., increase in collection period by 10 days or total 40 days) should be adopted since the net benefits under this policy are higher as compared to other policies.

Working Notes:

(i) Fixed Cost = [Average Cost per unit - Variable Cost per unit] × No. of units sold

= [₹2.25 – ₹2.00] × (₹6, 00,000/3)

= ₹0.25 × 2, 00,000 = ₹50,000

(ii) Opportunity Cost of Average Investments

$$\text{Total Cost of Credit Sales} \times \frac{\text{Collection period (Days)}}{365 \text{ (or } 360)} \times \frac{\text{Required Rate of Return}}{100}$$

Present Policy = (4, 50,000 × 30 / 360) × (20 / 100) = ₹7,500

Policy A = (4, 70,000 × 40 / 360) × (20 / 100) = ₹10,444

Policy B = (4, 82,000 × 50 / 360) × (20 / 100) = ₹13,389

Policy C = (5, 00,000 × 60 / 360) × (20 / 100) = ₹16,667

Policy D = (5, 10,000 × 75 / 360) × (20 / 100) = ₹21,250

6. **(a) Solaris Ltd. sells goods in domestic market at a gross profit of 25%, not counting on depreciation as a part of the 'cost of goods sold'. Its estimates for next year are as follows:**

Amount (₹in lakh)

Sales - Home at 1 month's credit	**1,200**
Exports at 3 months' credit, selling price 10 %below home price	**540**
Materials used (suppliers extend 2 months' credit)	**450**
Wages paid, 1/2 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 ₹20 lakh as cash. Assuming a 15% safety margin, ascertain the estimated working capital requirement of the company. (ignore work -in-process).

[7]

Answer:

(a) Statement showing determination of Working Capital (Amount in ₹lakhs)

Current Assets	(₹)	Computation	
Cash	20.00		
Raw Materials	37.50	(450 lakh / 12)	
Finished Goods	122.50	(1,470 lakh / 12)	
Debtors-Domestic market	100.00	(1,200 / 12)	
Export Market	135.00	(540 × 3 / 12)	
Sales Promotion Expense	15.00	3(60 lakh × 3 /12)	
Total Current Assets (A)	**430.00**		
Current Liabilities			**(₹)**
Raw Materials (450 × 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 (A-B)			**285.00**
Add: Safety Margin @ 15%			42.75
Working Capital Requirement			**327.75**

Working notes:

1. Cost of Production

Particulars	₹ in lakhs
Material used	450
Wages paid	360
Manufacturing exp	540
Administration exp	120
Total	1470

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

(b) **Surya Industries Ltd. is marketing all its products through a network of dealers. All sales are on credit and the dealers are given one-month time to settle bills. The company is thinking of changing the credit period with a view to increase its overall profits. The marketing department has prepared the following estimates for different periods of credit:**

Particulars	Present Policy	Plan I	Plan II	Plan III
Credit period (in months)	1	1.5	2	3
Sales (₹Lakhs)	120	130	150	180
Fixed costs (₹ Lakhs)	30	30	35	40
Bad debts (% of sales)	0.5	0.8	1	2

The company has a contribution/sales ratio of 40% further it requires a pre-tax return on investment at 20%. Examine each of the above proposals and recommend the best credit period for the company.

[7]

(b)

Analysis of Credit Policies (₹ in Lakhs)

Credit Period (months)	Current Policy	Plan I	Plan II	Plan III
Fixed Costs	30	30	35	40
Profit Before Bad debts and ROI in Debtors	18	22	25	32
Cost	(120-18) 102	(130-22) 108	125	148
Amt. invested in Receivable	(102 × 1/12) 8.5	13.5	20.83	37
Required return on investment in receivables @ 20%	(8.5 × 20%) 1.7	2.7	4.166	7.4
Bad debs (%)	0.5	0.8	1	2
Bad debts amount	0.60	1.04	1.5	3.6
Net profit (18-17-0.60)	**15.7**	**18.26**	**19.334**	**21**

Better to choose plan – III as it gives the highest Net Income.

ILLUSTRATION 2

From the following information of XYZ Ltd., you are required to CALCULATE:

(a) Net operating cycle period.

(b) Number of operating cycles in a year.

(i)	*Raw material inventory consumed during the year*	*6,00,000*
(ii)	*Average stock of raw material*	*50,000*
(iii)	*Cost of Production for the year*	*5,00,000*
(iv)	*Average work-in-progress inventory*	*30,000*
(v)	*Cost of goods sold during the year*	*8,00,000*
(vi)	*Average finished goods stock held*	*40,000*
(vii)	*Average collection period from debtors*	*45 days*
(viii)	*Average credit period availed*	*30 days*
(ix)	*No. of days in a year*	*360 days*

ILLUSTRATION 4

The following annual figures relate to XYZ Co.:

	(₹)
Sales (at two months' credit)	*36,00,000*
Materials consumed (suppliers extend two months' credit)	*9,00,000*
Wages paid (1 month lag in payment)	*7,20,000*
Cash manufacturing expenses (expenses are paid one month in arrear)	*9,60,000*
Administrative expenses (1 month lag in payment)	*2,40,000*
Sales promotion expenses (paid quarterly in advance)	*1,20,000*

The company sells its products on gross profit of 25%. Depreciation is considered as a part of the cost of production. It keeps one month's stock each of raw materials and finished goods, and a cash balance of ₹ 1,00,000.

Assuming a 20% safety margin, COMPUTE the working capital requirements of the company on cash cost basis. Ignore work-in-process.

ILLUSTRATION 5

Samreen Enterprises has been operating its manufacturing facilities till 31.3.2022 on a single shift working with the following cost structure:

	Per unit (₹)
Cost of Materials	6.00
Wages (out of which 40% fixed)	5.00
Overheads (out of which 80% fixed)	5.00
Profit	2.00
Selling Price	18.00
Sales during 2020-21 – ₹ 4,32,000	

As at 31.3.2022 the company held:

	(₹)
Stock of raw materials (at cost)	36,000
Work-in-progress (valued at prime cost)	22,000
Finished goods (valued at total cost)	72,000
Sundry debtors	1,08,000

In view of increased market demand, it is proposed to double production by working an extra shift. It is expected that a 10% discount will be available from suppliers of raw materials in view of increased volume of business. Selling price will remain the same. The credit period allowed to customers will remain unaltered. Credit availed of from suppliers will continue to remain at the present level i.e., 2 months. Lag in payment of wages and expenses will continue to remain half a month.

You are required to PREPARE the additional working capital requirements, if the policy to increase output is implemented.

6. *Aneja Limited, a newly formed company, has applied to a commercial bank for the first time for financing its working capital requirements. The following information is available about the projections for the current year:*

Estimated level of activity: 1,04,000 completed units of production plus 4,000 units of work-in-progress. Based on the above activity, estimated cost per unit is:

Raw material	*₹ 80 per unit*
Direct wages	*₹ 30 per unit*
Overheads (exclusive of depreciation)	*₹ 60 per unit*
Total cost	*₹ 170 per unit*
Selling price	*₹ 200 per unit*

Raw materials in stock: Average 4 weeks consumption, work-in-progress (assume 50% completion stage in respect of conversion cost) (materials issued at the start of the processing).

Finished goods in stock	*8,000 units*
Credit allowed by suppliers	*Average 4 weeks*
Credit allowed to debtors/receivables	*Average 8 weeks*
Lag in payment of wages	*Average 1.5 weeks*

Cash at banks (for smooth operation) is expected to be ₹ 25,000.

Assume that production is carried on evenly throughout the year (52 weeks) and wages and overheads accrue similarly. All sales are on credit basis only.

You are required to CALCULATE the net working capital required.

7. *The management of Trux Company Ltd. is planning to expand its business and consults you to prepare an estimated working capital statement. The records of the company reveals the following annual information:*

	(₹)
Sales – Domestic at one month's credit	18,00,000
Export at three month's credit (sales price 10% below domestic price)	8,10,000
Materials used (suppliers extend two months credit)	6,75,000
Lag in payment of wages – ½ month	5,40,000
Lag in payment of manufacturing expenses (cash) – 1 month	7,65,000
Lag in payment of Administration Expenses – 1 month	1,80,000
Selling expenses payable quarterly in advance	1,12,500
Income tax payable in four installments, of which one falls in the next financial year	1,68,000

Rate of gross profit is 20%. Ignore work-in-progress and depreciation.

The company keeps one month's stock of raw materials and finished goods (each) and believes in keeping ₹ 2,50,000 available to it including the overdraft limit of ₹ 75,000 not yet utilized by the company.

The management is also of the opinion to make 10% margin for contingencies on computed figure.

You are required to PREPARE the estimated working capital statement for the next year.