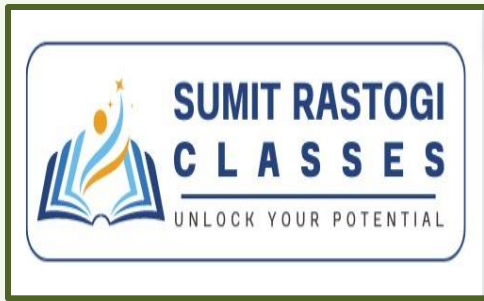




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FM & BDA

(TEST PAPER – 02)

**(CHAPTERS COVERED – COST OF CAPITAL, CAPITAL BUDGETING,
WORKING CAPITAL MANAGEMENT)**

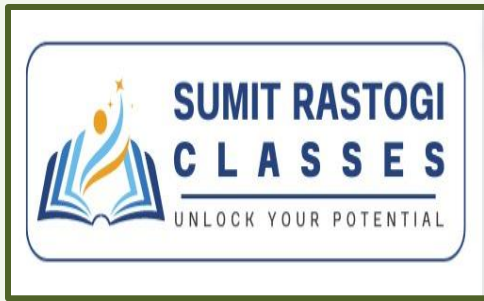
Time Allowed: 3 Hours

Full Marks: 100

**Section A contains Question Number 1. All parts of this question are compulsory.
Working notes should form part of the relevant answer.**

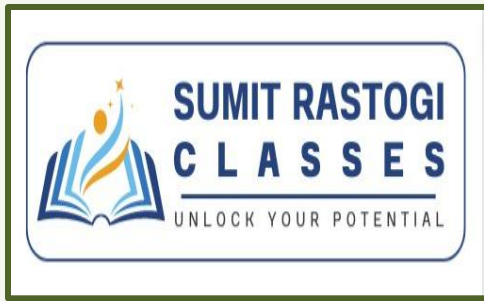
SECTION – A

1. Choose the correct answer from the given alternatives (you may write only the Roman number and the alphabet of your answer. (2×15=30 Marks)
 - (i) Internal rate of return is the discounting factor which:
 - (A) Ensures that the present value of Net Cash Inflow is the Net Cash Outflow
 - (B) Ensures that the present value of Net Cash Inflow is > the Net Cash Outflow
 - (C) Equates the present value of Net Cash Inflow to the Net Cash Outflow
 - (D) None of these
 - (ii) A project of ₹20,00,000 yielded annually profit of ₹3,00,000 after depreciation at 12.5% for 5 years and is subject to income tax at 50%. What will be the Pay Back Period?
 - (A) 4 Years
 - (B) 5 Years
 - (C) 6 Years
 - (D) 8 Years
 - (iii) Annual Cost saving ₹80,000, Applicable Present Value of Annualised Cash flows for ₹1 is 2.855, Profitability index 1.064, Salvage value 0. NPV will be:
 - (A) ₹14,671
 - (B) ₹14,617
 - (C) ₹14,761
 - (D) None of the above



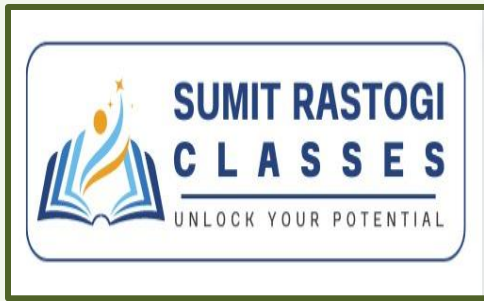
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- (iv) If Discounted Pay Back period is 5 years and cost of capital is 12%, find IRR when the life of the project is also 5 years.
- (A) 12%
 - (B) 15%
 - (C) 13%
 - (D) 10%
- (v) Which of the following would be consistent with a more aggressive approach to financing working capital?
- (A) Financing some long-term needs with short-term funds
 - (B) Financing seasonal needs with short-term funds.
 - (C) Financing permanent inventory buildup with long-term debt.
 - (D) Financing short-term needs with short-term funds
- (vi) ₹25,000 is being invested at the beginning of every year. We are now at the end of year II. Considering a 10% interest rate, what is today's value of the annual investments from year I till and including that of year V?
- (Take 10% discount factors as: 1, 0.909, 0.826, 0.751, 0.683, 0.621, 0.564 for year-end 0, 1, 2, 3, 4, 5, 6)
- (A) ₹1,23,000
 - (B) ₹1,23,500
 - (C) ₹1,27,000
 - (D) ₹1,25,000
- (vii) Total Sales ₹125 lakhs, Credit Sales being four times the cash sales. Variable Cost 85% of Sales, Bad Debt 5%, Selling Price per unit ₹500, Average Cost per unit ₹450, Credit Terms are 3/24, Net 40. 25% of the credit customers avail Cash Discount facility, Required Rate of Return (pre-tax) 16%, Tax Rate 25%. Calculate the Opportunity Cost of Investment in Receivable (assume 360 days in a year).
- (A) ₹1,08,000
 - (B) ₹1,40,000
 - (C) ₹1,20,000
 - (D) None of the above
- (viii) Working Capital Management involves financing and management of:
- (A) Cash and Bank Balance
 - (B) Receivables and Payables.
 - (C) All Assets
 - (D) All Current Assets



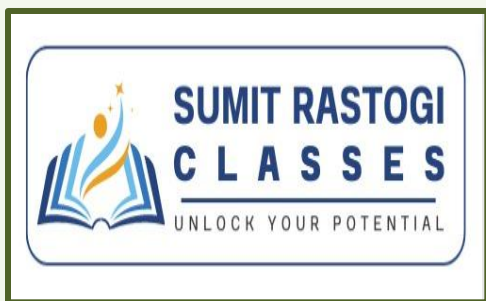
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- (ix) The capital structure of X Ltd. consists of 40% Equity Share Capital, 40% Preference Capital and 20% Debt. The after-tax cost of the Preference Capital and Debt are 18% and 9% respectively. The weighted average cost is 19%, X Ltd. paid currently a dividend of 13 per share. The current market price of its equity share is 112. Find the growth rate.
(A) 10%
(B) 12%
(C) 9%
(D) 11%
- (x) If Annual Growth Rate is 50% of the Cost of Equity and the Dividend Yield is $9\frac{1}{11}\%$, then the Cost of Equity would be:
(A) 20%
(B) 22%
(C) 25%
(D) 18%
- (xi) Cost of Capital may be defined as:
(A) Average IRR of the Projects of the firm.
(B) Minimum Rate of Return that the firm should earn.
(C) Weighted Average cost of all debts.
(D) Rate of Return expected by Equity Shareholders.
- (xii) ABY Ltd. has paid dividend of ₹3 per share of 10 each last year and it is expected to grow @ 10% next year. If the market price of share is ₹60 what will be the Cost of equity?
(A) 16.50%
(B) 15.50%
(C) 12.00%
(D) 12.50%
- (xiii) Quarterly demand of Product ZED - 16,250 units, 2.5 units of Product ZED are obtained from one unit of Raw Material. Opening Stock of material is 14,000 units and Closing Stock will be 20% more than opening stock. The company incurs a handling cost of ₹10 plus freight of ₹65 per order. Storage Cost ₹0.50 per unit per month, Interest Cost 10% p.a., Obsolescence Cost 2% p.a., Purchase Price of Input Unit ₹50 per unit. How frequently should orders be placed assuming 360 days in a year?
(A) 15 days
(B) 7.5 days
(C) 6 days
(D) 3 days



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- (xiv) If A = Annual Consumption of Input (in Units), O = Ordering Cost per order and C = Carrying Cost per unit per annum, calculate the Ordering Cost per Annum at the Order Size of $\sqrt{2AO/C}$
- (A) $\sqrt{AOC}$
 - (B) $2\sqrt{AOC}$
 - (C) $\sqrt{AOC/2}$
 - (D) $\sqrt{2AOC}$
- (xv) Which of the Statements about factoring is true?
- (A) Factoring is employed to finance domestic business only.
 - (B) Factoring is used for medium term financing at a fixed rate of interest.
 - (C) The client is able to get 100% of total invoice as credit facility.
 - (D) Factoring is the purchase of the invoice of the client.



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SECTION – B

Answer any five questions from question number 2 to 8.

14×5 =70

2 (a) ABC 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.

The following are the further details:

1) Debt/Equity Mix	30%/70%
2) Cost of Debt upto ₹1,80,000	10% (Before Tax)
Cost of Debt beyond ₹1,80,000	16% (Before Tax)
3) Earnings Per Share	₹4
4) Dividend Payout Ratio	50% of Earnings
5) Expected Growth Rate in Dividend	10%
6) Current Market Price	₹44
7) Tax Rate	35%

You are required:

- To determine the pattern for raising the additional finance.
- To determine the post-tax average cost of additional debt.
- To determine the cost of retained earnings and cost of equity.
- Compute the overall weighted average after tax cost of additional finance.

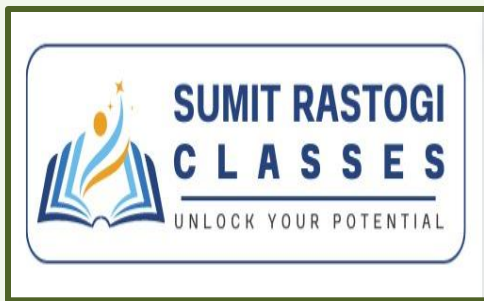
(7 marks)

2 (b) From the following information, work out the average amount of working capital requirement:

Particulars	Average Period of credit (in Weeks)	Estimate for the year (52 Weeks) (₹)
Purchase of Raw Material	6	26,00,000
Wages	1.5	20,80,000
Rent	26	1,00,000
Other Overheads	8	10,40,000
Salaries	4	13,00,000
Credit Sales	8	52,00,000

Average amount of holding of stocks and WIP is ₹4,00,000 and there should be cash balance of ₹50,000. Assume that all expenses and income are made evenly throughout the year.

(7 marks)



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3 (a) Lokesh Ltd. is considering buying a machine costing ₹15,00,000 which yields the following annual income:

End of Year	1	2	3	4	5
Annual Income after Depreciation but Before Tax	3,50,000	3,72,000	3,10,000	1,75,000	1,10,000
PV Factors at 12% of ₹1	0.893	0.797	0.712	0.636	0.567

Corporate tax rate applicable is 30%. Depreciation is on straight line basis for 5 years. There is no scrap value. Normal rate of return is 12%. Round off calculations to the nearest rupee.

Calculate:

- Pay-back period
- Discounted Pay-back period
- Net Present Value
- Profitability Index.

(7 marks)

3 (b) PAN Ltd. has the following Capital Structure on September 30, 2021:

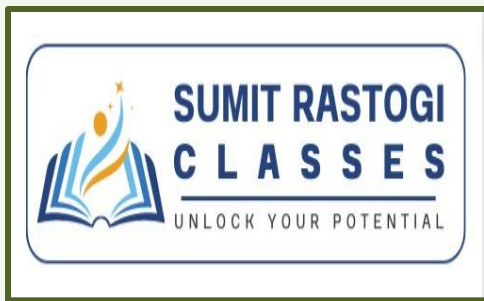
	Amount (₹in Thousands)
Equity Share Capital (₹10 each)	2,000
Other Equity	2,000
12% Preference Shares	1,000
9% Debentures	<u>3,000</u>
	<u>8,000</u>

The market Price of Equity Share is ₹30. It is expected that the Company will pay next year a dividend of ₹3 per share which will grow at 7% forever. Corporate Tax is 40%.

Based on above information you are required to answer the following questions:

- What is the Cost of Equity?
- What is the Weighted Average Cost of Capital (WACC) of the Company using book value weights?

(7 marks)



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4 (a) MONPTEK LTD. wants to replace its old machine with a new automatic machine. Two models A and B are available at the same cost of ₹5 lakhs each. Salvage value of the old machine is ₹1 lakh. The utilities of the existing machine can be used if the company purchases A. Additional cost of utilities to be purchased in that case is ₹1 lakh. If the company purchases B then all the existing utilities will have to be replaced with new utilities costing ₹1.8 lakhs. The earnings after taxation are expected to be:

Year	Cash Inflows (₹)		PVIF @15%
	A	B	
1	1,00,000	2,00,000	0.87
2	1,50,000	2,10,000	0.76
3	1,80,000	1,80,000	0.66
4	2,00,000	1,70,000	0.57
5	1,70,000	40,000	0.50
Salvage value at the end of Year 5	50,000	60,000	

The targeted return on capital is 15%. Based on Profitability Index Criterion, advise the company on which machine should be taken up by it.

(7 marks)

4 (b) M/S Bright Ltd. provides you with the following details:

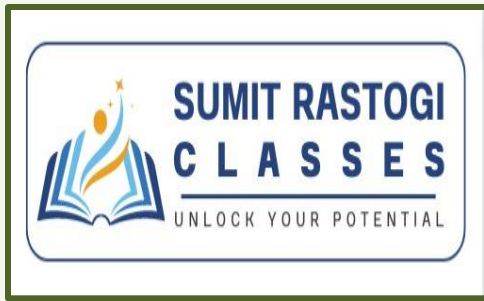
Particulars	Cost per unit (₹)
Raw Material	60
Direct Labour	20
Overhead	30
Total Cost	110
Profit	30
Selling Price	140

Average raw material remains in stock for one month. Average material in work-in-process is for half month. Credit allowed to customers-1 month and credit allowed by suppliers-1 month.

Average time lag in payment of wages: 10 days; average time lag in payment of overheads 30 days. 25% of sales are on cash basis. Cash balance expected to be ₹50,000. Finished goods lie in the warehouse for one month

You are advised to prepare a statement of working capital to finance a level of activity of 54,000 unit of output p.a. Production is carried on evenly throughout the year and wages and overheads accrue similarly. State your assumptions, if any.

(7 marks)



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5 (a) HDR Ltd. requires additional finance of 20 lakhs for meeting its investment plans. The following information is given:

- (i) Company has 4,00,000 in the form of retained earnings available for investment purposes.
- (ii) Target Debt-Equity Ratio: 25:75.
- (iii) Cost of debt is 10% (before tax) for the first 2,00,000 and 13% (before tax) beyond that.
- (iv) Earnings Per Share 12.
- (v) Dividend Payout Ratio 50%.
- (vi) P/E Ratio 5.
- (vii) The company wants to offer the issue of Equity Shares at a premium of 20% of the market price. The flotation cost is expected to be 6 per share.
- (viii) Company's tax rate is 30% and the shareholder's personal tax rate is 20%.

Calculate the overall weighted average (after tax) cost of additional finance.

(7 marks)

5 (b) GOLDDILOCKS LTD. sells goods to domestic market on a gross profit of 25% on sales without considering depreciation. Its estimates for the year 2019-20 as follows:

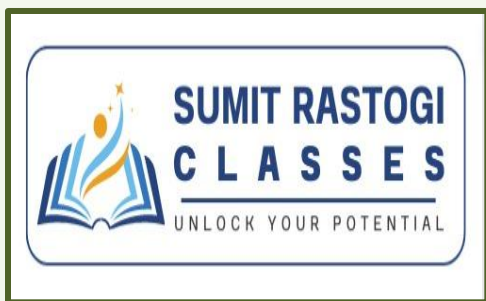
Particulars	Amount (₹ in Lakh)
Sales: Domestic Market at 2 months' Credit	1,600
Export (Selling price 10% below home price) (Exports at 3 months' Credit)	540
Cost:	
Materials used (Suppliers extend 2 months' Credit)	600
Wages paid (1/2 month in Arrear)	400
Manufacturing Expenses (Paid 1 month in Arrear)	600
Sales Promotion (Payable quarterly in advance)	80
Administration Expenses (Paid 1 month in Arrear)	200

- The company maintains one month's stock of each raw material and finished goods.
- A Cash Balance of ₹20 lakh is also maintained.
- There is no Work-in-Progress (WIP).
- All expenses and incomes are made evenly throughout the year.

Required:

Prepare a statement of Working Capital Requirements of the Company for 2019-20 on Cash Cost basis.

(7 marks)



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6 (a) Given below are the data on a capital project “M”:

Annual Cost Saving	60,000
Useful Life	4 years
Internal Rate of Return	15%
Profitability index	1.064
Salvage value	0

You are required to calculate for this project M:

- (i) Cost of Project
- (ii) Pay-back Period
- (iii) Cost of Capital
- (iv) Net Present Value

Given the following table of discount factors:

DISCOUNT FACTOR	15%	14%	13%	12%
1 year	0.869	0.877	0.885	0.893
2 year	0.756	0.769	0.783	0.797
3 year	0.658	0.675	0.693	0.712
4 year	0.572	0.592	0.613	0.636
	2.855	2.913	2.974	3.038

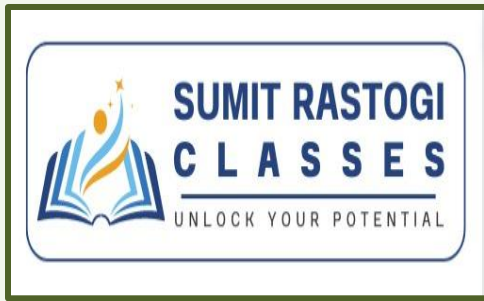
(7 marks)

6 (b) Kaloo Ltd. requires additional finance of ₹20 lakhs for meeting its investment plans. The company has ₹4,00,000 in the form of retained earnings available for investment purposes.

Target Debt-Equity Ratio 25:75. Cost of debt is 10% (before tax) for the first ₹2,00,000 and 13% (before tax) beyond that. Earnings per share ₹12. Dividend Payout Ratio 50%, P/E Ratio 5. The company wants to offer the issue of Equity Shares at a premium of 20% of the market price. The flotation cost is expected to be ₹6 per share. Company's tax rate is 30% and the shareholder's personal tax rate is 20%.

Calculate the overall weighted average (after tax) cost of additional finance.

(7 marks)



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7 (a) BENTECH (I) LTD. is presently having credit sales of 12 lakhs. The existing credit terms are 1/10, net 45 days and average collection period is 30 days.

The current bad debts loss is 1.5%. In order to accelerate the collection process further as also to increase sales, the company is contemplating liberalization of its existing credit to 2/10, net 45 days. It is expected that sales are likely to increase by 1/3 of existing sale to 20 days. The crease to 2% of sales and average collection period to decline to 20 days. The contribution to sales ratio of the company is 22% and opportunity cost of investment in receivables is 15 per cent (pre-tax). 50 per cent and 80 per cent of customers in terms of sales revenue are expected to avail cash discount under existing and liberalization scheme respectively. The tax rate is 30%. (Assume 360 days in a year).

Required:

Should the company change its credit terms?

(7 marks)

7 (b) HONEY Ltd. having limited funds of ₹10,10,000 and cost of capital 10% is evaluating the desirability of following projects having useful life of 10 years:

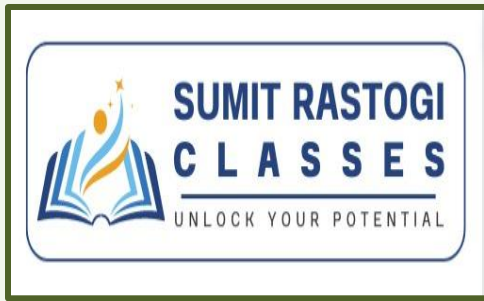
Project	A	B	C	D	E	F
Initial Cash Outflows	50,000	1,00,000	1,50,000	2,00,000	2,50,000	6,00,000
Net Present Value	4,50,000	8,00,000	10,50,000	12,00,000	13,75,000	32,40,000
Ranking as per NPV	6	5	4	3	2	1
Ranking as per Profitability Index	1	2	3	4	5	6

Required:

- Which projects should be selected assuming that the projects are divisible and there is no alternative use of money allocated for capital budgeting.
- Which projects should be selected assuming that the projects are indivisible and unutilised funds can be invested for a period of 10 years at a risk-free interest rate of 5%.

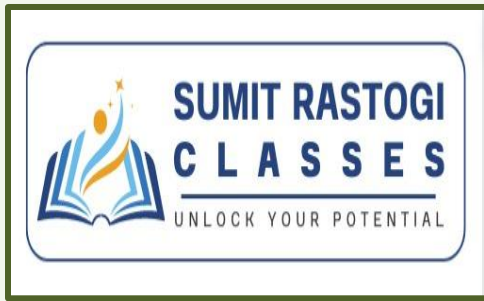
Note: The Compound Value of 1 @ 5% at the end of the 10th year is 1.629 and the Present Value of ₹1 @10% at the end of the 10th year is ₹0.386.

(7 marks)



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- 8 (a)** What are the distinctive features of a Financial Lease and an Operating Lease? (5 marks)
- 8 (b)** Write a short note on need of Capital Budgeting Decision. (5 marks)
- 8 (c)** Write a Short Note on Determinants of Working Capital. (4 marks)



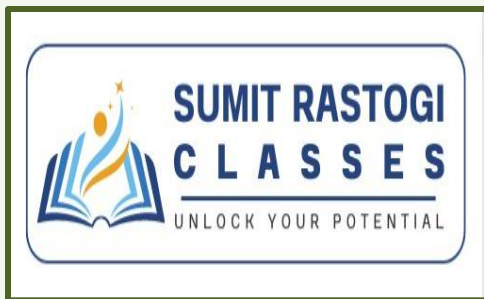
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SOLUTIONS (TEST PAPER-2)

SECTION - A

ANS. 1

- (i) (C) Equates the present value of Net Cash Inflow to the Net Cash Outflow.
- (ii) (B) 5 Years
- (iii) (D) None of the above
- (iv) (A) 12%
- (v) (A) Financing some long-term needs with short-term funds
- (vi) (D) ₹1,25,000
- (vii) (A) ₹1,08,000
- (viii) (D) All Current Assets
- (ix) (B) 12%
- (x) (D) 18%
- (xi) (B) Minimum Rate of Return that the firm should earn.
- (xii) (B) 15.50%
- (xiii) (B) 7.5 Days
- (xiv) (C) $\sqrt{(AOC/2)}$
- (xv) (D) Factoring is the purchase of the invoice of the client.



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SECTION – B

ANS. 2 (a)

(a) Pattern for raising the additional finance:

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

Financing pattern with costs:

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

(b) Post-tax average cost of additional debt:

$$K_d = I(1 - t)$$

$$K_{d1} = 10\% \times (1 - 0.35) = 6.50\%$$

$$K_{d2} = 16\% \times (1 - 0.35) = 10.40\%$$

$$\text{Post-tax average cost} = (6.5 \times 1,80,000) / 3,00,000 + (10.4 \times 1,20,000) / 3,00,000$$

$$= 3.90 + 4.16 = 8.06\%$$

(c) Cost of Retained Earnings and Cost of Equity:

$$K_r = K_e$$

$$K_e = D_1 / P_0 + g$$

Here, D_1 = Dividend to be paid at the end of the year = 50% of ₹4 = ₹2.00 per Share.

P_0 = Current market price per share

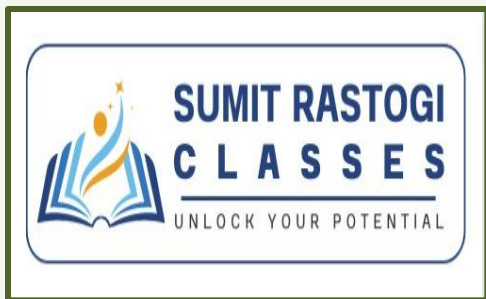
Dividend pay-out ratio = 50%

Growth rate is 10%

Hence, at the end of the year, dividend will be = $2 + 10\% = 2.20$

(d) Weighted average after tax cost of additional finance:

Sources of Capital	₹	Weight	Cost of Capital (%)	Weighted Cost (%)
Debt	3,00,000	0.30	8.06	2.418
Retained Earnings	2,10,000	0.21	15.00	3.15
Equity	4,90,000	0.49	15.00	7.35
Total	10,00,000	1.00		12.918

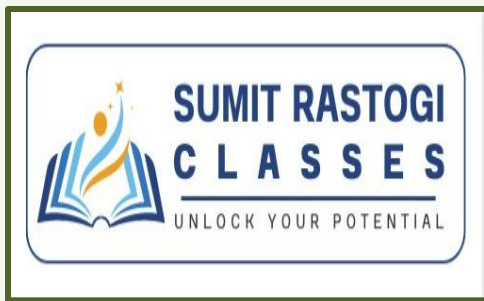


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ANS. 2 (b)

STATEMENT OF DETERMINATION OF WORKING CAPITAL

Particulars	Details	Amount (₹)
Current Assets:		
Stock and WIP		4,00,000
Debtors	$52,00,000 \times 8/52$	8,00,000
Cash		50,000
Current Liabilities:		
Creditors	$26,00,000 \times 6/52$	3,00,000
Wages Payable	$20,80,000 \times 1.5/52$	60,000
Rent Payable	$1,00,000 \times 26/52$	50,000
Other Overheads Payable	$10,40,000 \times 8/52$	1,60,000
Salaries Payable	$13,00,000 \times 4/52$	1,00,000
Working Capital		5,80,000



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ANS. 3 (a) Annual Depreciation = $15,00,000/5 = ₹3,00,000$

Calculation of Annual Cash Inflows:

Year	Profit before tax	Tax 30%	Profit after tax	Cash Inflow = PAT + Depreciation	Cumulative Cash Inflow	PVIF	Discounted Cash Inflow	Cumulative Discounted Cash Inflow
1	3,50,000	1,05,000	2,45,000	5,45,000	5,45,000	0.893	4,86,685	4,86,685
2	3,72,000	1,11,600	2,60,400	5,60,000	11,05,400	0.797	4,46,639	9,33,324
3	3,10,000	93,000	2,17,000	5,17,000	16,22,400	0.712	3,68,104	13,01,428
4	1,75,000	52,500	1,22,500	4,22,500	20,44,900	0.636	2,68,710	15,70,138
5	1,10,000	33,000	77,000	3,77,000	24,21,900	0.567	2,13,759	17,83,897
				24,21,900			17,83,897	

- (i) Pay-back Period = $2 + (15,00,000 - 11,05,400)/5,17,000 = 2.763$ year
(ii) Discounted pay-back period $3 + (15,00,000 - 13,01,428)/2,68,710 = 3.739$ Years
(iii) Net Present Value (NPV) = Total Present Value of Cash Inflows - Initial Investment
= $17,83,897 - 15,00,000 = ₹2,83,897$
(iv) Profitability Index Total Present Value of Cash Inflows/Initial Investment
= $17,83,897/15,00,000 = 1.18926$

ANS. 3 (b)

(i) Cost of Equity:

$$K_e = D_1/NP + g = 3/30 + 0.17 = 17\%$$

(ii) Weighted Average Cost of Capital (WACC) of the Company using book value weights:

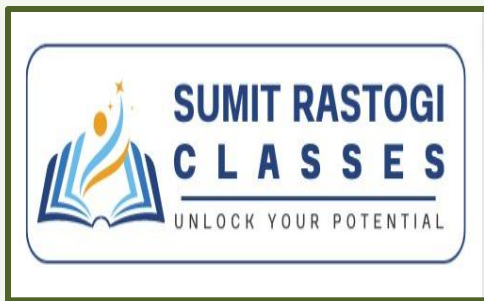
Sources of Capital	₹ In Thousands	Weight	Cost of Capital (%)	Weighted Cost (%)
Equity Share Capital	2,000	0.25	17	4.25
Other Equity	2,000	0.25	17	4.25
Preference Share Capital	1,000	0.125	12	1.50
Debentures	3,000	0.375	5.40	2.025
Total	8,000	1.000		12.025

Working Note

$$K_p = 12\%$$

$$K_d = I(1 - T) = 9(1 - 0.40) = 5.40\%$$

$$K_r = K_e = 17\%$$



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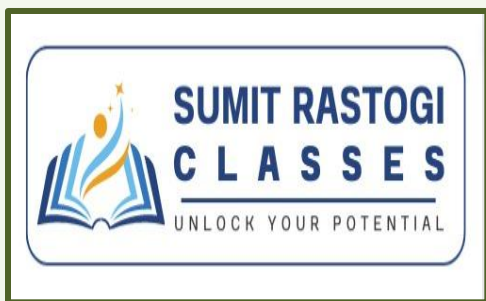
ANS. 4 (a)

Cash Outflows:

Particulars	Amount (₹)
Cost of Proposal B	15,00,000
Less: Cost of Proposal A	(10,00,000)
Incremental Cash outflows	5,00,000

Year	Cash Inflows		PVIF @14%	Discounted Cash Inflow	
	A (₹)	B (₹)		A (₹)	B (₹)
1	1,00,000	2,00,000	0.87	87,000	1,74,000
2	1,50,000	2,10,000	0.76	1,14,000	1,59,600
3	1,80,000	1,80,000	0.66	1,18,000	1,18,800
4	2,00,000	1,70,000	0.57	1,14,000	96,900
5	1,70,000	40,000	0.50	85,000	20,000
Salvage	50,000	60,000	0.50	25,000	30,000
Total DCI				5,43,800	5,99,300
Initial Outflow				5,00,000	5,80,000
PI = TDCI/CO				1.0876	1.0333

Advice: Since the profitability Index is higher in the case of Machine A is better to choose Machine – A.



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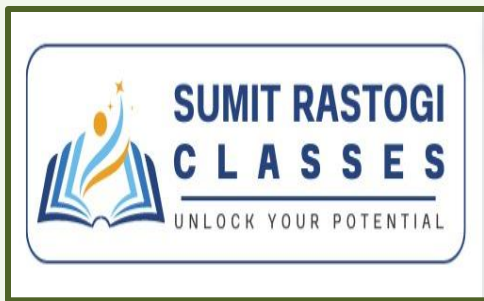
ANS. 4 (b)

Statement of Determination of Working Capital

Particulars	Details	Amount (₹)
Current assets:		
Raw Material Inventory	$60 \times 54,000 \times 1/12$	2,70,000
WIP Inventory	$[(60 \times 100\%) + (20 \times 50\%) + (30 \times 50\%)] \times 54,000 \times 0.5/12$	1,91,250
Finished Goods Inventory	$110 \times 54,000 \times 1/12$	4,95,000
Sundry Debtors (On Sales)	$54,000 \times 140 \times 75\% \times 1/12$	4,72,500
Cash		50,000
TOTAL CURRENT ASSETS		14,78,750
Liabilities		
Creditors	$60 \times 54,000 \times 1/12$	2,70,000
Wages Payable	$20 \times 54,000 \times 10/360$	30,000
Overheads Payable	$30 \times 54,000 \times 30/360$	1,35,000
TOTAL CURRENT LIABILITIES		4,35,000
NET WORKING CAPITAL		10,43,750

Working Notes

1. In valuation of work-in-progress, raw materials have been taken at full requirements for 15 days but wages and overhead have been taken at 50% on the assumption that on an average all units in work-in-progress are 50% complete.
2. 1 month has been taken equal to 30 days.



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ANS. 5 (a) Working Notes

1. Cost Equity Capital:

$$\begin{aligned} \text{Dividend} &= 12 \times 50\% = 6 \\ \text{MP} &= 5 \times 12 = 60 \\ \text{Issue Price} &= 60 \times 120\% = 72 \\ \text{NP} &= 72 - 6 = 66 \\ K_e = D_0/N_P &= 6/66 = 0.0909 = 9.09\% \end{aligned}$$

2. Cost of retained Earnings:

$$\begin{aligned} K_r &= K_e (1 - t) \\ K_r &= 9.09 (1 - 0.20) = 7.27\% \end{aligned}$$

3. Cost of Debentures:

$$\begin{aligned} K_d (\text{after tax}) &= 1 (1 - T) \\ \text{For Debt upto 2,00,000} &K_d = 10(1 - 0.3) = 7\% \\ \text{For Debt Above 2,00,000} &K_d = 13 (1 - 0.3) = 9.1\% \end{aligned}$$

4. Pattern for raising the additional finance:

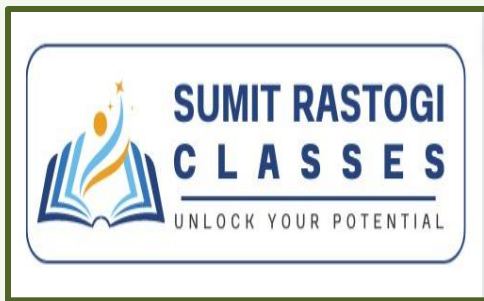
Debts 25% of ₹2,00,000	₹5,00,000
Equity 75% of ₹20,00,000	₹15,00,000
Total	₹20,00,000

Financing pattern with costs:

Source	Amount in ₹	Cost
Debts	2,00,000	10%
Debts	3,00,000	13%
Retained Earnings	4,00,000	
Equity (15,00,000 – 4,00,000)	11,00,000	
	20,00,000	

Weighted Average Cost of Capital (WACC) of the Company:

Sources of Capital	₹	Weight	Cost of Capital (%)	Weighted Cost (%)
Equity Share Capital	11,00,000	0.55	9.09	5.00
Retained Earnings	4,00,000	0.20	7.27	1.45
Debt	2,00,000	0.10	7.00	0.70
Debt	3,00,000	0.15	9.10	1.37
Total	20,00,000	1.000		8.52



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ANS. 5 (b)

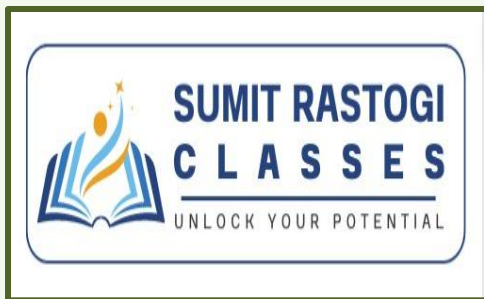
STATEMENT OF DETERMINATION OF WORKING CAPITAL

Particulars	Details	Amount (₹ in Lakhs)
Current Assets:	$600 \times 1/12$	50
Raw Material Inventory	$1,800 \times 1/12$	150
Sundry Debtors:		
Domestic	$1,600 \times 75\% \times 2/12$	200
Export	$[540/0.9] \times 75\% \times 3/12$	112.50
Cash		20
Sale Promotion expenses	$80 \times 1/14$	20
TOTAL CURRENT ASSETS		552.50
Liabilities		
Creditors	$600 \times 2/12$	100
Wages Payable	$400 \times 0.5/12$	16.67
Manufacturing Expenses Payable	$600 \times 1/12$	50
Administrative Expenses Payable	$200 \times 1/12$	16.67
TOTAL CURRENT LIABILITIES		183.34
WORKING CAPITAL		369.16

WORKING NOTE:

COST OF PRODUCTION

Material Used	600
Wages Paid	400
Manufacturing Expenses	600
Administrative Expenses	200
Total	1,800



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ANS. 6 (a)

PV of cash inflows at 15% = Cost of Project

Cost of Project = PV of ₹60,000 for 4 years at 15% = $60,000 \times 2.855 = ₹1,71,300$.

(i) NPV:

PI = PV of Cash Inflows/ PV of Initial Cash Outflow = 1.064

Hence, PV of Cash Inflows = Initial Cash Outflow (Cost of Project)
 $= ₹1,71,300 \times 1.0641 = ₹1,82,263$

NPV = PVCIF - Cash Outflow = $1,82,263 - 1,71,300 = ₹10,963$.

(ii) Cost of Capital:

PV of Cash Inflows at Cost of Capital (r) for 4 years = ₹1,82,263

PV Factor for 4 years $1,82,263/60,000 = 3.038$ which is at 12%.

Hence, Cost of Capital = 12%.

ANS. 6 (b)

Working Notes

(1) K_d for debt first 2,00,000 = $10 (1 - 0.30) = 7\%$
 K_d for debt beyond 2,00,000 = $13 (1 - 0.30) = 9.1\%$

(2) Price EPS $\times$ P/E ratio = $12 \times 5 = 60$

Issue Price = $60 \times 120\% = 72$

Dividend = $12 \times 50\% = 6$

$K_e = 6 \times 100 / (72 - 6) = 9.09\%$

$K_r = K_e (1 - 0.20) = 9.09 (1 - 0.20) = 7.27\%$

(3) Weight of Debt = 25%

Debt = $20,00,000 \times 25\% = ₹5,00,000$

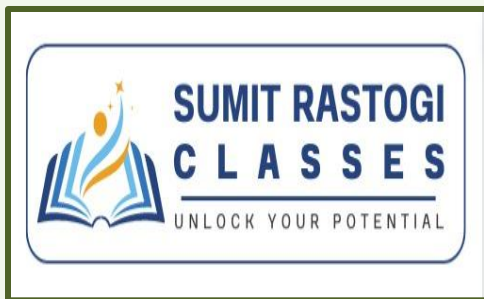
Equity = $20,00,000 \times 75\% = ₹15,00,000$

Retained Earnings = ₹4,00,000

ESC = ₹11,00,000

Calculation of Marginal Cost of Capital

Source of Fund	Amount (₹)	Weight	Cost of Capital	Weight $\times$ Cost
Equity	11,00,000	0.55	9.09	5.00
Retained Earnings	4,00,000	0.20	7.27	1.45
10% Debt	2,00,000	0.10	7.00	0.70
13% Debt	3,00,000	0.15	9.10	1.37
Total	20,00,000	1.00		8.52



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ANS. 7 (a)

STATEMENT SHOWING EVALUATION OF CREDIT POLICIES

Particulars	Present Policy (₹)	Proposed Policy (₹)
Credit Sales	12,00,000	16,00,000
Less: Variable Cost @ 78%	9,36,000	12,48,000
Contribution	2,64,000	3,52,000
Less: Bad debts 1.5% and 2%	18,000	32,000
Less: Cash Discount	6,000	25,600
Profit before Tax	2,40,000	2,94,400
Less: Tax at 30%	72,000	88,320
Profit after Tax	1,68,000	2,06,080
Less: Cost of investment in Receivables	8,190	7,280
Net Profit	1,59,810	1,98,800

Working Note

Calculation of Cash discount:

(i) Cash Discount = Total credit Sales × % of customers who take up discount × Rate

Present Policy = $12,00,000 \times 50\% \times 1\%$ = ₹6,000

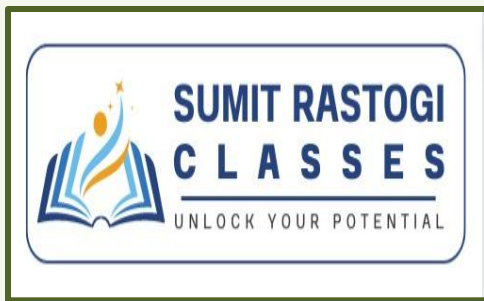
Proposed Policy = $16,00,000 \times 80\% \times 2\%$ = ₹25,600

(ii) Opportunity Cost of Investment in Receivables (After Tax):

Present Policy = $9,36,000 \times (30/360) \times 15\% \times (1-0.30)$ = ₹8,190

Proposed Policy = $12,48,000 \times (20/360) \times 15\% \times (1-0.30)$ = ₹7,280

ADVISE: PROPOSED POLICY SHOULD BE ADOPTED SINCE THE NET BENEFIT IS INCREASED BY (₹1,98,800-₹1,59,810) = ₹38,990.



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ANS. 7 (b)

(i) DIVISIBLE PROJECTS

DECISION SHOULD BE BASED ON PROFITABILITY INDEX RANKINGS

Proposal	Initial Cash Outflows	Net Present Value
A	50,000	4,50,000
B	1,00,000	8,00,000
C	1,50,000	10,50,000
D	2,00,000	12,00,000
E	2,50,000	13,75,000
	7,50,000	48,75,000
F (10,10,000 – 7,50,000)	2,60,000	14,04,000 (32,40,000 × 2,60,000/6,00,000)
Total	10,10,000	63,79,000

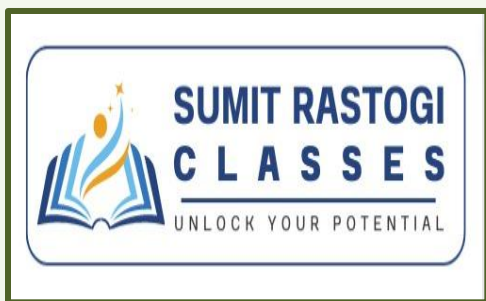
(ii) INDIVISIBLE PROJECTS

DECISION SHOULD BE BASED ON NET PRESENT VALUE RANKINGS.

Proposals	Initial Cash Outflows	Net Present Value	Unutilized Fund
FEC	10,00,000	56,65,000	10,000
FEBA	10,00,000	58,65,000	10,000
FDCA	10,00,000	59,40,000	10,000
FDBA	9,50,000	56,90,000	60,000
ABCDE	7,50,000	48,75,000	2,60,000

Since, Unutilised Funds can be invested at 5% only, whereas, the Cost of Capital is 10%, it is not worth investing the unutilised funds. Hence, decision is taken based on NPV without considering use of unutilised funds.

Decision: Proposals FDCA should be selected as they give the highest combined NPV.



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ANS. 8 (a) Leasing is an arrangement that provides a firm with the use and control over assets without buying and owning them.

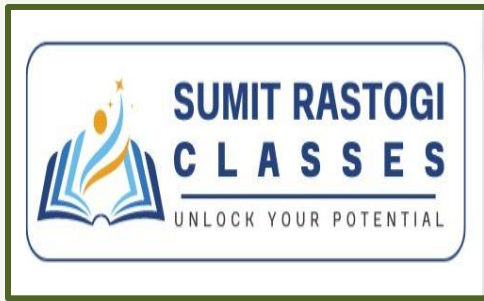
Operating Lease	Finance Lease
Short term. The lease period is usually less than the life of the asset.	Usually long term. Lease period almost coincides with the useful life of the asset.
The Present value may not match the cost of the asset. The lessor may have to again lease it out to the same or an- other party.	The Present value of the lease rentals usually exceeds or at least is substantially equal to the whole of the cost of the asset.
Usually cancellable at short notice.	Not normally cancellable at short notice.
Lessee generally has the option of renewal. Otherwise another party takes the asset on a fresh lease since the useful life is normally not over.	Usually provides the lessee the option of renewal.
Lessor is generally responsible for insurance, maintenance and taxes.	Lessee is generally responsible for insurance, taxes and maintenance.
Common to equipments requiring expert technical staff. The lessors normally limit their purchases to many equipments of the same type to ensure cost effective maintenance.	Common to assets like land, building, machinery, fixed equipments. Lessor has a wider variety of assets since he does not use technical experts to maintain.

ANS. 8 (b) Need of Capital Budgeting Decision:

The selection of the next profitable Project of capital investment is the key Function of Financial Manager. The decisions taken by the management in this area affect the operations of the firm for many years.

Capital budgeting decisions may be generally needed for the following purposes:

- (i) **Expansion:** Firm requires additional funds to invest in Fixed in Fixed assets when it intends to expand the production facilities.
- (ii) **Replacement:** The machines and equipments used in production may either wear out or may be rendered obsolete due to new technology. The firm needs funds for modernization and renovation.
- (iii) **Diversification:** Diversification in production would require large funds for long term investment.
- (iv) **Buy or Leases:** This is most important area in financial management whether the firm acquires the desired equipment and building on lease or buy it.
- (v) **Research and development.**



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ANS. 8 (c) Determinants of Working Capital:

The size or magnitude and amount of working capital will not be uniform for all organizations and will differ from one organization to another.

The following are some factors that would determine the size of Working Capital:

- Nature and size of the Business;
- Production Policies of the concern;
- Process of manufacturing;
- Growth and expansion of business;
- Fluctuations in the trade cycle;
- Dividend Policy;
- Operating Efficiency;
- Other Factors like Market facilities, tax consideration, Locational Factors, Labour availability etc.