(RTP FMSM Jan 2025)
Division A: Case Scenarios

Integrated Case Scenario

Q1: Samvar Ltd, a leading FMCG company having its current presence in more than 150 Tier I and Tier II cities in India. The stores are operating in the brand name of GoMART competing with Reliance fresh, Walmart, BigBazaar and other chains. Owing to the increase in demand from Tier III cities and rural areas, it is planning for massive expansion and is contemplating to open up additional 50 stores which will have variety of FMCG products.

The CFO and his team estimate that the funds needed for massive expansion would be ₹200 lakhs per store. Such funds would be utilised for buying out a space and setting up a store, buying the other required fixed assets, etc. Central government will provide a revenue subsidy of 15% on Gross profit if the overall cost of capital doesn't exceed 10%.

Apart from above, CFO and his team require an estimate on the additional capital needed based for the smooth running of fixed assets and its daily operations. Based on their market research, they have collected the other information for each store which is as follows-

Average Sales would be ₹120 lakhs p.a. with a GP margin of 18%. Customers pay through different digital modes and channels including POS systems (Debit and credit cards) which generally takes approx. 9 days for the funds to get credited in the bank account. 15% of the customers use debit and credit cards to make the payment. Installing a POS system comes with a fee of 2% of total sales through POS.

Being a FMCG outlet, inventories of multiple products need to be kept. Different products have different storage period. However primarily, products are classified into three broad categories, Durable, Semi Durable & Perishable. Perishable products comprise 60% of sales, whereas semi-durable is 25% and balance is for durable products. Inventory storage period for perishable, semi-durable & durable products are 10 days, 30 days & 60 days respectively. Suppliers of these products provide a credit period of average 30 days.

Each store will employ around 20 personnel of a different hierarchy and monthly average salaries to staff for each store is estimated at ₹4 lakhs per month. Company will pay employees' dues on the 1st of next month.

Samvar Ltd plans to keep optimum cash balance in hand as suggested by Baumol's model. Excess cash balance if any, will be invested in the marketable securities which will generate a return of 12% p.a. The total disbursement for the year is estimated at ₹1.50 lakhs per month with the transaction cost of ₹20 per transfer to the disbursement account.

The optimum capital structure with debt equity of 2:1 has been proven ideal for raising the finance and company wishes to follow the same pattern for the additional funds required for each store. Trade credit can also be utilised for financing the expansion needs.

The cost of raising debt and equity for each store is as per the slabs as under:

Project Cost *	Cost of Debt	Minimum rate expected by equity share holders
Upto 80 lakhs	10%	12.5%
Above 80 lakhs but upto 150 Lakhs	11.5%	13.5%
Above 150 lakhs & Upto 250 lakhs	12%	14%
Above 250 lakhs	13.5%	15%

*It means that upto 80 lakhs of project cost company can raise debt at 10% and equity at 12.5% and so on.

Tax rate applicable to the corporate is 25%

Based on the above details, calculate the following for each store:

Q1(i): The optimum Cash balance is

(a) ₹7,071

(b) ₹26,500

(c) ₹7,150

(d) ₹24,495

(RTP Jan 2025)

Solution 1(i): (d) ₹24,495

As per William J Baumol,

$$\text{Optimum cash balance} = \sqrt{\frac{2AT}{O}}$$

A = Annual Cash disbursement

T = Cost per transfer

O = Opportunity cost

$$= \sqrt{\frac{2 \times 18,00,000 \times 20}{0.12}} = ₹24,495$$

Q1(ii): The Gross and Net Working Capital for the next year would be

(a) ₹6.7730 L, (₹5.9396 L)

(b) ₹6.7730 L, ₹12.7125 L

(c) ₹200 L, (₹5.9396 L)

(d) (₹5.9396 L), ₹6.7730 L

(RTP Jan 2025)

Solution 1(ii): (a) ₹6.7730 L, (5.9396 L)

Gross working capital is sum of total current assets and net working capital is Gross working capital less current liabilities.

Estimation of Working Capital Statement

Particulars	Amount (₹)	Amount (₹)
(A) Current Assets/Gross Working Capital		
1. FG Inventory (WN 1)	6,15,000	
2. Trade receivables (WN 2)	37,800	
3. Cash/bank balance (Calculated in Solution 1)	24,495	6,77,295
(B) Current Liabilities		
1. Trade payables (WN 3)	8,71,250	
2. Outstanding salaries (WN 4)	4,00,000	12,71,250
Net Working Capital (A) - (B)		**(5,93,955)**

Working Notes:

(1) **Calculation of FG Inventory**

FG Inventory = COGS x $\frac{\text{FG Storage Period (Days)}}{360}$

COGS = 120 Lakhs x 82% = ₹98.40 Lakhs

Perishable = 98.40 x 60% x 10/360 = ₹1.64 Lakhs

Semi Durable = 98.40 x 25% x 30/360 = ₹2.05 Lakhs

Durable = 98.40 x 15% x 60/360 = ₹2.46 Lakhs

Total = ₹6.15 lakhs

(2) **Calculation of Trade Receivables**

Since, company is into FMCG industry, sales are always on cash basis as no credit is given to any of the customer. However, as mentioned in the case study, company will get the credit in the bank account only after 9 days for those customers that pay through POS (debit and credit cards). It means companies funds' get blocked for 9 days. Company's trade receivable would only comprise of 15% of total sales as rest are through cash basis

Trade Receivables = Cost of Sales x Days Blocked/360

= 15.12 L x 9/360 = 0.378 Lakhs

Cost of Sales = COGS + POS Transaction fees

= (98.40 L x 0.15) + (120 L x 0.15 x 2%) = ₹15.12 Lakhs

(3) **Calculation of Trade Payables**

Trade Payables = Purchases x $\frac{\text{Average Credit period in days}}{360}$

= 104.55 x 30/360 = ₹8.7125 Lakhs

Purchases = COGS + Closing Stock - Opening Stock

Since, company is planning to open up new store, its opening stock would be NIL but there would be definitely a closing FG stock which is calculated in WN 1

Therefore, Purchases = ₹98.40 Lakhs + ₹6.15 Lakhs - 0 = ₹104.55 Lakhs

(4) **Calculation of Outstanding salaries**

Salaries are paid on 1st of next month, thereby meaning it has been outstanding for a period of 30 days assuming salaries accruing evenly throughout.

Outstanding salaries = ₹48,00,000 x 30/360 = ₹4,00,000

Q1(iii): The amount of total funds needed to setup a store is

(a) ₹194.0605 Lakhs

(b) ₹200 Lakhs

(c) ₹6.7730 Lakhs

(d) ₹206.7730 Lakhs

(RTP Jan 2025)

Solution 1(iii): (a) ₹194.0605 L

Total Capital needed = Total capital needs (Fixed assets) + Working Capital needs

= 200 Lakhs + (5,93,955) = ₹194.0605 Lakhs

Q1(iv): The overall cost of capital for raising additional funds for setting up of each store is
(a) 10.01%
(b) 10.65%
(c) 9.90%
(d) 8.91%

(RTP Jan 2025)

Solution 1(iv): (c) 9.90%
Samvar Ltd would require financing of ₹194.0605 lakhs from debt and equity and not ₹200 lakhs as trade credit is also considered to be a source of finance as mentioned in the case study.
Furthermore, the overall cost of raising this additional fund for each store of ₹194.0605 needs to be calculated slab wise.

Project Cost	Weights (W)	Cost (K)	W X K	Total cost (₹)
Upto 80 Lakhs	Debt = 0.67	Kd = 10 (1 - 0.25) = 7.5	Ko = 9.167%	= 80 Lakhs x 9.167%
	Equity = 0.33	Ke = 12.5		= 7.334 Lakhs
Above 80 Lakhs	Debt = 0.67	Kd = 11.5(1 - 0.25) = 8.625	Ko = 10.25%	= 70 Lakhs x 10.25%
upto 150 Lakhs	Equity = 0.33	Ke = 13.5		= 7.175 Lakhs
Above 150 Lakhs	Debt = 0.67	K = 12 (1 - 0.25) = 9	Ko = 10.667%	= 44.0605 Lakhs x 10.667%
upto 250 Lakhs	Equity = 0.33	Ke = 14		= 4.7 Lakhs

Total Funds = 194.0605 Lakhs
Total Cost (₹) = ₹7.334 Lakhs + ₹7.175 Lakhs + ₹4.700 Lakhs = ₹19.209 Lakhs
Ko = Total Cost /Total Funds
= ₹19.209 lakhs/₹194.0605 lakhs = 9.90%

Q1(v): The amount of revenue subsidy granted by the central govt is
(a) ₹3 L
(b) ₹3.24 L
(c) Nil
(d) ₹2.25 L

(RTP Jan 2025)

Solution 1(v): (b) ₹3.24 Lakhs
Since the Overall Cost of Capital is below 10%, Samvar Ltd is eligible for revenue subsidy
Revenue Subsidy = GP x 15%
= 21.6 Lakhs x 15% = ₹3.24 Lakhs

Dividend Decision

Q2: The cost of capital of a firm is 12% & its expected earning per share at the end of the year is ₹20. its existing payout ratio is 25%. the company is planning to increase its payout ratio to 50% what will be the effect of this change on the market price of equity share (MPS) of the company as per Gordon model, if the reinvestment rate of the company is 15%?
(a) It will increase by ₹444.45
(b) It will decrease by ₹444.45
(c) It will increase by ₹222.22
(d) It will decrease by ₹222.22

(RTP Jan 2025)

Solution 2: (b) It will decrease by ₹444.45
Current D_1 = 20 x 25% = 5
Current g = 0.75 x 0.15 = 11.25%
Current MPS = 5/(0.12 - 0.1125) = 666.67
Proposed D_1 = 20 x 50% = 10
Proposed g = 0.5 x 0.15 = 0.075
Proposed MPS = 10/(0.12 - 0.075) = 222.22
Change in MPS = 666.67 - 222.22 = ₹444.45

Financing Decision - Cost of Capital

Q3: Abhi Ltd is an all equity financed company. It is considering replacing ₹275 lakhs equity shares with 15% debentures of the same amount. Current Market value of the company is 1,750 lakhs with cost of capital at 20%. Future EBITs are going to be constant and entire earnings are going to be distributed. Corporate Tax Rate can be assumed to be 30%. What will be the new cost of equity of the firm?

(a) 19.11%
(b) 17.53%
(c) 10.50%
(d) 20.62%

(RTP Jan 2025)

Solution 3: (d) 20.62%

Current PAT = 1750 x 20% = 350
Current PBT = Future EBIT = 350/0.7 = 500
Future PBT = 500 – 275 x 15% = 458.75
Future PAT = 458.75 x 70% = 321.125
Value (L) = Value (UL) + Debt x t = 1,750 + 275 x 30% = 1832.5
Value of Equity = 1832.5 - 275 = 1557.5
Ke = 321.125/1557.5 = 20.62%

Division B: Descriptive Questions

Financial Analysis & Planning – Ratio Analysis

Q4: Vardhaman Limited gives you the following information related for the year ending 31st March, 2024:

Particulars	Amount (₹)
Current Ratio	3:1
Loan funds to Owned Funds Ratio	1:3
Gross Profit Ratio	25%
Stock Turnover Ratio	10
Net Working Capital	₹5,00,000
Return on Total Assets (pre-tax)	15%
MPS	₹20
Total Assets Turnover Ratio	2.5
Opening stock	₹6,50,500
Fixed Assets	₹15,00,000
75,000 equity shares of	₹10 each
25,000, 12% Pref. Shares of	₹10 each
Depreciation	₹50,000
Interest on Debt	9%
Future Instalments	₹2,00,000

Tax rate applicable to the company is 25%

You are required to calculate:

(i) Quick Ratio
(ii) Fixed Assets Turnover Ratio
(iii) Debt Service Coverage
(iv) Earnings per Share
(v) Price Earnings Ratio

(RTP Jan 2025)

Solution 4: Working Note:

(1) **Calculation of Current Assets & Current Liabilities**

Current Ratio = CA/CL = 3:1

Therefore, CA	=	3CL
Net Working Capital	=	CA - CL = 5,00,000
	=	3CL - CL = 5,00,000
Therefore, CL	=	2,50,000,
CA	=	7,50,000

(2) **Calculation of Average Stock Value & Closing Stock**

Total Assets = Fixed Assets + Current Assets
= 15 Lakhs + 7.5 Lakhs = 22.50 lakhs
Total Assets Turnover Ratio = Sales/Total Assets = 2.5 (given)
Therefore Sales = 22.5 lakhs x 2.5
Sales = 56,25,000
GP Margin = 25%, therefore COGS = 75% of Sales
COGS = ₹56,25,000 x 75% = ₹42,18,750
Stock Turnover Ratio = COGS/Average Stock = 10 (given)
Average Stock = ₹42,18,750/10 = ₹4,21,875
Average Stock = (Opening Stock + Closing Stock)/2

₹4,21,875 = (₹6,50,500 + Closing Stock)/2
Closing Stock = ₹1,93,250

(3) **Calculation of Cash Profit before Interest & Tax**

Return on Total Assets (pre-tax) = (EBIT/Total Assets)
0.15 = EBIT/22.50 lakhs
Therefore, EBIT = ₹3,37,500
Cash Profit before Int & Tax = EBIT + Depreciation
= ₹3,37,500 + ₹50,000 = ₹3,87,500

(4) **Calculation of Loan Funds (Debt) & Owned Funds (Equity)**

Debt to Equity = 1:3, which means 3 times Debt = Equity (Owned Funds)
As per the Accounting equation,

Equity + Debt + Current Liabilities	=	Fixed Assets + Current Assets
3 Debt + Debt + ₹2,50,000	=	₹15,00,000 + ₹7,50,000
4 Debt	=	₹20,00,000
Therefor Debt (Loan Funds)	=	₹5,00,000
Equity (Owned Funds)	=	₹15,00,000

(5) **Calculation of Earnings Available to Eq. Share holders**

Particulars	Amount (₹)
EBIT	3,37,500
Less: Interest (5 lakhs x 9%)	(45,000)
EBT	**2,92,500**
Less: Tax @25%	(73,125)
EAT	**2,19,375**
Less: Pref Div. (2,50,000 x 12%)	(30,000)
Earnings For Eq. Sh Holders	**1,89,375**

(1) Quick Ratio = (CA - Closing Stock)/CL
= (7,50,000 – 1,93,250)/2,50,000
Quick Ratio = 2.23 : 1

(2) Fixed Assets Turnover Ratio = Sales/Total Fixed Assets
= ₹56,25,000/₹15,00,000 = 3.75 times

(3) Debt Service Coverage Ratio = Cash profit before Interest & Tax/(Interest + Instalments)
= 3,87,500/(45,000 + 2,00,000)
Debt Service Coverage Ratio = 1.58 times.

(4) EPS = Earnings for Eq. Shareholders/No of Eq. Shareholders
= ₹1,89,375/75,000 = ₹2.53

(5) Price to Earnings Ratio = MPS/EPS
= 20/2.53
Price to Earnings Ratio = 7.91 times

Financing Decision - Cost of Capital

Q5: The Capital Structure of Samyaktva Limited is as follows:

	Amount (in ₹)
12% Debentures	3,50,000
14% Pref. Shares	4,50,000
Equity shares (Face value of ₹10 each)	8,50,000
	16,50,000

Additional Information:

1. ₹100 per debentures redeemable at premium of 6% with floatation cost of 5% & 5 years of maturity. The current market price of the debenture is ₹115.
2. ₹100 per preference shares redeemable at a premium of 10%, issued at discount of 2% with a floatation cost of 5% on the issue price. The current market price per preference share is ₹108. It has maturity of 10 years.
3. An equity share has a floatation cost of ₹5 with a market price per share currently quoted at ₹30. Samyaktva Limited paid a last dividend of ₹4 and the company is expected to give an annual growth rate of 9% on the dividends. The company has a practice of paying all the earnings in the form of dividends.
4. Corporate Taxation rate is at 25%

Calculate WACC using market value weights

(RTP Jan 2025)

Solution 5: (1) **Calculation of Cost of Debt**

$$\frac{I(1-t) + (RV - NP)}{}$$

$$Kd = \frac{n}{\frac{(RV + NP)}{2}}$$

RV = 100 + 6% = 106

n = term = 5 years

t = tax = 0.25

NP = Issue price – Floatation cost

= 115 – 5% (Issue price will be at Market price and no Face Value)

= 109.25

$$Kd = \frac{12(1 - 0.25) + \frac{(106 - 109.25)}{5}}{\frac{(106 + 109.25)}{2}}$$

Kd = 7.76%

(2) **Calculation of Cost of Preference Shares**

$$Kp = \frac{PD + \frac{(RV - NP)}{n}}{\frac{(RV + NP)}{2}}$$

RV = 100 + 10% = 110

n = term = 10 years

NP = Issue Price – Floatation cost

Issue Price = (108 – 2% x 108) = 105.84

Net Proceeds = 105.84 - 5% x 105.84 = 100.55

$$Kp = \frac{14 + \frac{(110 - 100.55)}{10}}{\frac{(110 + 100.55)}{2}}$$

Therefore Kp = 14.19%

(3) **Calculation of Cost of Equity**

Since growth rate is given, Ke is to be calculated by using Gordon's formula

As per Gordon,

$$Ke = \frac{D_1}{P_0} + g$$

Where, D_1 = Expected dividend at the end of Year 1

Po = Current Market Price (–) Floatation cost

G = growth rate in dividends

$$Ke = \frac{4 + 9\% \times 4}{30 - 5} + 0.09 = 26.44\%$$

Calculation of WACC using Market Value Weights

Sources	Amount of Capital (₹)	Weights (W)	Cost (K)	(W) x (K)
Debentures	4,02,500 (3,500 x 115)	0.1171	7.76 (WN 1)	0.9087
Preference shares	4,86,000 (4,500 x 108)	0.1413	14.19 (WN 2)	2.00
Equity shares	25,50,000 (85,000 x 30)	0.7416	26.44 (WN 3)	19.6079
	34,38,500			**Ko = 22.52%**

Financing Decision - Capital Structure

Q6: Ritu Limited in the expansion stage and it provides you the following information:

Particulars	(₹)
Profit (EBIT)	5,00,000
Less: Interest on Debenture @ 10%	(1,00,000)
EBT	**4,00,000**
Less: Income Tax @30%	(1,20,000)
	2,80,000
No. of Equity Shares (₹10 each)	50,000

Earnings per share (EPS)	5.6
Price/EPS (PE) Ratio	10

The company has reserves and surplus of ₹10,00,000 and required ₹5,00,000 further for modernisation. Return on Capital Employed (ROCE) is constant. Debt (Debt/ Equity) Ratio lesser than 2 will raise the P/E Ratio to 12. Interest rate on additional debts is 12%. You are required to ascertain the probable price of the share.

(i) If the additional capital are raised as debt; and

(ii) If the amount is raised by issuing equity shares at ruling market price.

(RTP Jan 2025)

Solution 6: Ascertainment of probable price of shares of Akash limited

Particulars	Plan-I If ₹5,00,000 is raised as debt (₹)	Plan-II If ₹5,00,000 is raised by issuing equity shares (₹)
Earnings Before Interest and Tax (EBIT)	6,00,000	6,00,000
[20% of new capital i.e. 20% of (₹25,00,000 + ₹5,00,000)] (WN 1)		
Less: Interest on old debentures (10% of ₹10,00,000)	(1,00,000)	(1,00,000)
Less: Interest on new debt (12% of ₹5,00,000)	(60,000)	-
Earnings Before Tax (EBT)	**4,40,000**	**5,00,000**
Less: Tax @30%	(1,32,000)	(1,50,000)
Earnings for equity shareholders (EAT)	**3,08,000**	**3,50,000**
No. of Equity Shares (WN 2)	50,000	58,929
Earnings per Share (EPS)	**₹6.16**	**₹5.94**
Price/Earnings (P/E) Ratio (WN 3)	12	10
Probable Price Per Share (PE Ratio x EPS)	**₹73.92**	**₹59.40**

Working Notes:

(1) **Calculation of existing Return of Capital Employed (ROCE):**

Particulars	(₹)
Equity Share capital (50,000 shares x ₹10)	5,00,000
10% Debentures (₹1,00,000 x 100/10)	10,00,000
Reserves and Surplus	10,00,000
Total Capital Employed	**25,00,000**
Earnings before interest and tax (EBIT)	5,00,000
ROCE $\left(\frac{₹5,000,000}{₹25,00,000} \times 100\right)$	**20%**

(2) **Number of Equity Shares to be issued in Plan-II:**

$= \frac{₹5,00,000}{₹56} = 8,929$ shares

Thus, after the issue total number of shares = 50,000 + 8,929 = 58,929 shares

(3) **Debt/Equity Ratio if ₹5,00,000 is raised as debt:**

$= \frac{₹15,00,000}{₹15,00,000} = 1$

As the debt equity ratio is less than 2 the P/E ratio will be increase to 12 in Plan-I

Financing Decision – Leverages

Q7: From the following financial data of Company X and Company Y:

(i) Prepare their Income Statements.

(ii) Calculate Margin of Safety for both the Companies

(iii) Calculate Percentage change in EPS for both the companies, if percentage change in sales is 25%

Particulars	Company X (₹)	Company Y (₹)
Variable Cost	72,000	65% of Sales
Fixed Cost	35,000	-
Interest Expenses	12,000	6,000
Financial Leverage	4:1	-
Operating Leverage	-	5:1
Income Tax Rate	30%	30%
Sales	-	1,45,000

(RTP Jan 2025)

Solution 7: (i) Income Statement

Particulars	Co. X (₹)	Co. Y (₹)

Sales	1,23,000 (WN 2)	1,45,000
Less: Variable Cost	(72,000)	(94,250) (65% on sales)
Contribution	**51,000 (WN 2)**	**50,750**
Less: Fixed Cost	(35,000)	(40,600)
EBIT	**16,000 (WN 1)**	**10,150 (WN 3)**
Less: Interest	(12,000)	(6,000)
EBT	**4,000**	**4,150**
Less: Tax @30%	(1,200)	(1,245)
EAT	**2,800**	**2,905**

Working Note:

(1) **Calculation of EBIT for Co. X using Financial Leverage**

$$FL = \frac{EBIT}{EBT} \text{ or } \frac{EBIT}{EBIT - Interest}$$

$$4 = \frac{EBIT}{EBIT - ₹12,000}$$

EBIT = ₹16,000

EBT = ₹16,000 – ₹12,000 = ₹4,000

(2) **Calculation of Contribution and Sales using reverse mechanism**

Contribution = EBIT + Fixed Cost

= ₹16,000 + ₹35,000 = ₹51,000

Sales = Contribution + Variable Cost

Sales = ₹1,23,000

(3) **Calculation of EBIT for Co. Y using Operating leverage**

$$OL = \frac{Contribution}{EBIT}$$

$$5 = \frac{50,750}{EBIT}$$

EBIT = ₹10,150

(ii) Margin of Safety (MOS) is inversely proportionate to the Operating Leverage as higher the safety margin lower would be the business risk

$$MOS = \frac{1}{OL}$$

$$\text{Operating Leverage (Co. X)} = \frac{51,000}{16,000}$$

Operating Leverage (Co. X) = 3.1875 : 1

Therefore, MOS for Co. X = 1/3.1875

MOS for Co. X = 31.37%

Operating Leverage (Co. Y) = 5 : 1

$$\text{Therefore, MOS for Co. X} = \frac{1}{5}$$

MOS for Co. Y = 20%

(iii) Combined leverage measures the percentage change in EPS due to percentage change in sales

$$\text{Combined Leverage} = \frac{Contribution}{EBT}$$

$$\text{Combined Leverage (Co. X)} = \frac{51,000}{4,000} = 12.75$$

$$\text{Combined Leverage} = \frac{\% \text{ change in EPS}}{\% \text{ change in sales}}$$

$$12.75 = \frac{\% \text{ change in EPS}}{25\%}$$

% change in EPS (Co. X) = 318.75%

$$\text{Combined Leverage (Co. Y)} = \frac{50,750}{4,150} = 12.23$$

$$12.23 = \frac{\% \text{ change in EPS}}{25\%}$$

% change in EPS (Co. Y) = 305.75%

Dividend Decisions

Q8: The following information is supplied to you:

Particulars	Amount (₹)
Total Earnings	4,50,000
No. of Equity Shares (of ₹100 each)	25,000 shares
Retention ratio	40%
MPS	198

Applying Walter's Model:

(i) Analyse whether the company is following an optimal dividend policy.

(ii) Compute P/E ratio at which the dividend policy will have no effect on the value of the share. Also calculate the MPS at such P/E ratio

(iii) Will your decision change if the P/E ratio is 4.5? Analyse.

(RTP Jan 2025)

Solution 8: (i) As per Walter,

If ROI > Ke, firm should retain everything and distribute nothing to maximise the share price. On the contrary, if ROI < Ke, firm should distribute everything and retain nothing to maximise the wealth of the equity owners.

ROI = Total Earnings/Equity Share capital

= 4,50,000/25,00,000 = 18%

$Ke = \frac{1}{PE}$

PE Ratio = MPS/EPS

= 198/18 = 11

Therefor Ke = 1/11 = 9.091%

Since ROI > Ke, optimal dividend policy of the firm should be to retain everything and distribute nothing. However, the firm has retained 40% and distributed 60%, hence it is not having an optimal dividend policy as per Walter's model.

(ii) When ROI = Ke, dividend policy of the company will have no effect on the value of the share as per Walter's model

Therefore, in that case, Ke should be equal to 18%

$PE\ Ratio = \frac{1}{Ke} = \frac{1}{0.18}$ = 5.56 times

MPS at the above PE Ratio = 18 x 5.56 = ₹100.08

(iii) If PE Ratio is 4.5

$Ke = \frac{1}{4.5}$ = 22.22%

Since, ROI < Ke, optimal dividend policy of the firm should be to distribute everything and retain nothing, as the value of share would be maximum at that point thereby maximising the wealth of the shareholder.

Investment Decisions – Capital Budgeting

Q9: A company is considering the proposal to take up a new project which requires investment of ₹850 lakhs in plant & machinery and ₹150 lakhs in working capital. The project is expected to yield the following Cash flows before tax and depreciation over the next five years:

Year	(₹ in Lakhs)
1	290
2	320
3	360
4	390
5	270

The desired rate of return from the project is 14% and assets must be depreciated at 20% on a written down value basis. The scrap value at the end of the five-year period may be taken as ₹140 lakhs. The income tax applicable to the company is 20%. This is the only asset in the entire block. Capital gains tax is at 15% (for capital loss as well). You are required to calculate the net present value of the project and advise the management to take appropriate decisions. Also calculate the Internal Rate of Return and Desirability factor of the Project.

Note: Present values of Re. 1 at different rates of interest are as follows:

Year	14%	16%	20%
1	0.88	0.86	0.83
2	0.77	0.74	0.69
3	0.67	0.64	0.58

4	0.59	0.55	0.48
5	0.52	0.48	0.40

(RTP Jan 2025)

Solution 9: (A) Calculation of NPV

Working Note: (1) **Calculation of Present Value of Cash Outflow (PV CO)**

(i) Initial Investment = ₹850 lakhs

(ii) Working capital outlay = ₹150 lakhs

Therefore, total PVCO = ₹1,000 lakhs

(2) **Calculation of Present Value of Cash Inflows (PV CI)**

Cash flows before tax are given i.e. nothing but NPBDT **(₹ in lakhs)**

Year	1	2	3	4	5
NPBDT	290.00	320.00	360.00	390.00	270.00
Less: Depreciation	(170.00)	(136.00)	(108.80)	(87.04)	(69.63)
NPBT	**120.00**	**184.00**	**251.20**	**302.96**	**200.37**
Less: Tax	(24.00)	(36.80)	(50.24)	(60.59)	(40.07)
NPAT	**96.00**	**147.20**	**200.96**	**242.37**	**160.29**
Add: Depreciation	170.00	136.00	108.80	87.04	69.63
CFAT	**266.00**	**283.20**	**309.76**	**329.41**	**229.93**
Add: Working Capital Release					150.00
Add: Scrap					140.00
PV Factor @14%	0.88	0.77	0.67	0.59	0.52
PV CI	**234.08**	**218.06**	**207.54**	**194.35**	**270.36**

(i) Total PVCI = ₹1,124.40 Lakhs

(3) **Calculation of Present Value of tax savings on short term Capital loss**

Particulars	₹ in Lakhs
WDV at end of 5th year	278.53
Less: Sale value	(140.00)
Loss on sale	**138.53**
Tax savings on above @ 15%	**20.78**

PV of tax savings on short term capital loss (STCL) = Tax saving x PV factor (14%, 5th year)
= 20.78 x 0.52 = ₹10.81 lakhs

NPV = PV CI + PV of tax savings on STCL - PV CO
= 1124.40 + 10.81 – 1,000 = ₹135.20 lakhs

Advise: Since the NPV of the project is positive, project should be accepted

(B) Calculation of IRR

IRR is that discounting rate where NPV = 0 (point where PV of all CI = PVCO)

We know that @14%, NPV is ₹135.20, so by trial-and-error method we need to calculate that rate where NPV equals 0.

When Discounting rate is 16%

Particulars	1	2	3	4	5
CFAT	266.00	283.20	309.76	329.41	229.93
Add: Working Capital Release					150.00
Add: Scrap					140.00
PV Factor @14%	0.86	0.74	0.64	0.55	0.48
PV CI	**228.76**	**209.57**	**198.25**	**181.17**	**249.56**

PVCI	1067.31
Add: PV of tax savings on STCL (20.78 x 0.48)	9.97
Less: PVCO	(1,000)
NPV	**₹77.29**

Since NPV is positive at 16% as well, we need to go for Trial II at 20%

When Discounting rate is 20%

Particulars	1	2	3	4	5
CFAT	266.00	283.20	309.76	329.41	229.93
Add: Working Capital Release					150.00
Add: Scrap					140.00
PV Factor @14%	0.83	0.69	0.58	0.48	0.4
PVCI	**220.78**	**195.41**	**179.66**	**158.12**	**207.97**

PVCI	₹961.94
Add: PV of tax savings on STCL (20.78 x 0.40)	₹8.31
Less: PVCO	(₹1,000)
NPV	**(₹29.75)**

Since NPV is negative at 20%, IRR lies somewhere between 16% and 20%

$$IRR = LR + \frac{NPV_{LR}}{NPV_{LR} - NPV_{HR}} \times (HR - LR)$$

LR = Lower Rate (16% here)

HR = Higher Rate (20% here)

$$IRR = 16 + \frac{77.29}{77.29 - (-29.75)} \times (20 - 16) = 18.89\%$$

(C) Calculation of Desirability Factory (Profitability Index)

PI = Total PVCI/PVCO = 1,135.21/1,000 = 1.13521

Management of Working Capital

Question 10: Nirmoh Limited wants to avail short-term loan from the bank. However, bank grants short term loan by keeping the collateral in the form of accounts receivable. A bank is analysing the receivables of Nirmoh Limited to identify acceptable collateral for a short-term loan.

The current policy of the company is 3/10 net 40. Bank will lend only to the extent of 90% of acceptable receivables at an interest rate of 12% only if both the conditions mentioned below are fulfilled. Bank will keep a reserve of 5% for cash discount & returns.

(a) Customers are not currently overdue for more than 5 days to the net period

(b) Average aging (payment period) of the customer should not exceed 15 days past the net period.

If any of the above conditions are not fulfilled, the bank will lend 65% of the receivables subject to a reserve of 15% and the interest rate will be charged at 15% on such accounts. The corporate tax rate applicable is 25%.

On the scrutiny of all the receivables, following are the acceptable receivables considered for lending-

Accounts	Amount (₹)	Outstanding in Days since invoiced	Average Aging (payment period) in Days
DR 01	50,000	37	40
DR 02	25,000	25	48
DR 03	1,20,000	47	49
DR 04	72,000	10	56
DR 05	45,000	30	30
DR 06	1,75,000	39	50
DR 07	19,000	55	25
DR 08	54,000	44	54
DR 09	1,05,000	15	25
DR 10	37,000	22	75

You are required to calculate:

(a) Total amount lend by the bank

(b) Effective Interest cost (%) to the company

(RTP Jan 2025)

Solution 10: (a) Condition (a) says that accounts shouldn't be overdue for more than 5 days to the net period. In other words, it means those accounts who are overdue by 45 days (40 days + 5 additional days), will not fulfill condition a) and thus will not be eligible for 90% lending.

Therefore, from the above, we can see that Accounts DR 03 & DR 07 are overdue for more than 45 days and hence will not be eligible for 90% lending.

Condition (b) says that average receivables ageing (payment period) should not exceed 15 days to the net period i.e. it should not exceed 55 days (40 days + 15 days = 55 days). Therefore, from the above, we can see that Accounts DR 04 & DR 10 has an ageing of more than 55 days. Hence, they would also not be eligible for 90% lending.

Amount of Bank Lending:

Accounts	Bank Lending at 90%	Bank Lending at 65%
DR 01	50,000	-
DR 02	25,000	-
DR 03	-	1,20,000
DR 04	-	72,000
DR 05	45,000	-
DR 06	1,75,000	-
DR 07	-	19,000

DR 08	54,000	-
DR 09	1,05,000	-
DR 10	-	37,000
Total	**4,54,000**	**2,48,000**
Less: Reserve	(22,700)	(37,200)
	[4,54,000 x 5%]	[2,48,000 x 15%]
Net	**4,31,300**	**2,10,800**
Loan	**3,88,170**	**1,37,020**

Total short-term loan granted by the bank = ₹5,25,190

(b) Calculation of the Effective Interest Cost

Interest at 12% (On 90% lending) = 3,88,170 x 0.12 = 46,580.4

Interest at 15% (On 65% lending) = 1,37,020 x 0.15 = 20,553

Total Interest = ₹67,133.4

Effective Interest Cost (%) = Interest (1 - t)/Total Short-term Loan

= 67,133.4 x (1 - 0.25)/5,25,190 = 9.59%

Q11(a): List the emerging issues (any four) affecting the future role of CFO.

(RTP Jan 2025)

Solution 11: (a) Emerging Issues/Priorities Affecting the Future Role of Chief Financial Officer (CFO)

(i) **Regulation:** Regulation requirements are increasing and CFOs have an increasingly personal stake in regulatory adherence.

(ii) **Globalisation:** The challenges of globalisation are creating a need for finance leaders to develop a finance function that works effectively on the global stage and that embraces diversity.

(iii) **Technology:** Technology is evolving very quickly, providing the potential for CFOs to reconfigure finance processes and drive business insight through 'big data' and analytics.

(iv) **Risk:** The nature of the risks that organisations face are changing, requiring more effective risk management approaches and increasingly CFOs have a role to play in ensuring an appropriate corporate ethos.

(v) **Transformation:** There will be more pressure on CFOs to transform their finance functions to drive a better service to the business at zero cost impact.

(vi) **Stakeholder Management:** Stakeholder management and relationships will become important as increasingly CFOs become the face of the corporate brand.

(vii) **Strategy:** There will be a greater role to play in strategy validation and execution, because the environment is more complex and quick changing, calling on the analytical skills CFOs can bring.

(viii) **Reporting:** Reporting requirements will broaden and continue to be burdensome for CFOs.

(ix) **Talent and Capability:** A brighter spotlight will shine on talent, capability and behaviours in the top finance role.

Q11(b): Explain any four Methods for Computation of Cost of Equity Capital.

(RTP Jan 2025)

Solution 11(b): Cost of equity capital is the rate of return which equates the present value of expected dividends with the market share price.

Methods for Computation of Cost of Equity Capital

- **Dividend Price Approach:** Here, cost of equity capital is computed by dividing the expected dividend by market price per share.

$$Ke = \frac{D_1}{P_0}$$

- **Earning/ Price Approach:** The advocates of this approach co-relate the earnings of the company with the market price of its share.

$$Ke = \frac{E}{P}$$

- **Realised Yield Approach:** According to this approach, the average rate of return realised in the past few years is historically regarded as 'expected return' in the future. The yield of equity for the year is:

$$Y = \frac{D_t + P_t}{P_{t-1}}$$

- **Capital Asset Pricing Model Approach (CAPM):** CAPM model describes the risk-return trade-off for securities. It describes the linear relationship between risk and return for securities.

$$Ke = Rf + ß\,(Rm - Rf)$$

Q11(c): Do the profitability index and the NPV criterion of evaluating investment proposals lead to the same acceptance-rejection and ranking decisions? In what situations will they give conflicting results?

(RTP Jan 2025)

Solution 11(c): In the most of the situations the Net Present Value Method (NPV) and Profitability Index (PI) yield same accept or reject decision. In general items, under PI method a project is acceptable if profitability index value is greater than 1 and rejected if it less than 1. Under NPV method a project is acceptable if Net present value of a project is positive and rejected if it is negative. Clearly a project offering a profitability index greater than 1 must also offer a net present value which is positive. But a conflict may arise between two methods if a choice between mutually exclusive projects has to be made. Consider the following example:

	Project A	Project B
PV of Cash inflows	3,00,000	80,000
Initial cash outflows	1,00,000	40,000
Net present value	2,00,000	40,000
PI	3	2
	$\left(\frac{3,00,000}{1,00,000}\right)$	$\left(\frac{80,000}{40,000}\right)$

According to NPV method, project A would be preferred, whereas according to profitability index method project B would be preferred.

This is because Net present value gives ranking on the basis of absolute value of rupees, whereas, profitability index gives ranking on the basis of ratio. Although PI method is based on NPV, it is a better evaluation technique than NPV in a situation of capital rationing.