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FINANCIAL MANAGEMENT

Test Code - I N J 1 0 3 7

BRANCH - (MUMBAI) (Date : 12.06.2016)

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Answer-1 :

Working Notes:

1. Computation of Current Assets (CA) and Current Liabilities (CL)

$$\frac{\text{Current Assets}}{\text{Current Liabilities}} = \text{Current Ratio}$$

$$\frac{CA}{CL} = \frac{1.5}{1}$$

$\therefore$ CA = 1.5 CL

CA - CL = 1,50,000

1.5 CL - CL = 1,50,000

0.5 CL = 1,50,000

$$CL = \frac{1,50,000}{0.5} = 3,00,000$$

CA = 1.5 x 3,00,000 = 4,50,000

2. Computation of Bank Credit (BC) and Other Current Liabilities (OCL)

$$\frac{\text{Bank Credit}}{\text{Other CL}} = \frac{2}{1}$$

BC = 2 OCL

BC + OCL = CL

2 OCL + OCL = 3,00,000

3 OCL = 3,00,000

OCL = 1,00,000

Bank Credit = 2 × 1,00,000 = 2,00,000

3. Computation of Inventory

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

$$= \frac{\text{Current Assets - Inventories}}{\text{Current Liabilities}}$$

$$0.8 = \frac{4,50,000 - \text{Inventories}}{3,00,000}$$

0.8 × 3,00,000 = 4,50,000 – Inventories

Inventories = 4,50,000 – 2,40,000 = 2,10,000

4. Computation of Debtors

Inventory Turnover = 5 times

$$\text{Average Inventory} = \frac{\text{COGS}}{\text{Inventory turnover}}$$

COGS = 2,10,000 × 5 = 10,50,000

Average Collection Period (ACP) = 1.5 months = 45 days

$$\text{Debtors Turnover} = \frac{360}{ACP} = \frac{360}{45} = 8$$

$$\frac{\text{Sales - COGS}}{\text{Sales}} \text{ x } 100 = 25\%$$

$$\text{Sales – COGS} = \frac{25 \text{ x Sales}}{100}$$

Sales – 0.25 Sales = COGS

0.75 Sales = 10,50,000

$$\text{Sales} = \frac{10,50,000}{0.75} = 14,00,000$$

$$\text{Debtors} = \frac{\text{Sales}}{\text{Debtors Turnover}}$$

$$= \frac{14,00,000}{8} = 1,75,000$$

5. Computation of Bank and Cash

Bank & Cash = CA - (Debtors + Inventory)

= 4,50,000 – (1,75,000 + 2,10,000)= 4,50,000 – 3,85,000 = 65,000

6. Computation of Reserves & Surplus

$$\frac{\text{Reserves \& Surplus}}{\text{Bank \& Cash}} = 4$$

Reserves & Surplus = 4 × 65,000 = 2,60,000

(0.5 x 6 = 3 Marks)

Balance Sheet of SONA Ltd. as on March 31, 2013

Liabilities	Rs.	Assets	Rs.
Share Capital	5,75,000	Fixed Assets	6,85,000
Reserves & Surplus	2,60,000	Current Assets:	
Current Liabilities:		Inventories	2,10,000
Bank Credit	2,00,000	Debtors	1,75,000
Other Current Liabilities	1,00,000	Bank & Cash	65,000
	11,35,000		**11,35,000**

(3 Marks)

Answer-2 :

(i) Calculation of Cost of Capital for each source of capital:

1. Cost of Equity Capital:

$$K_e = \frac{DPS(1+g)}{MP} \text{ x } 100 + g$$

$$= \frac{25(1+0.05)}{200} \text{ x } 100 + 5$$

$$= \frac{26.25}{200} \text{x } 100 + 5$$

= 13.125 + 5 = 18.125%.

2. Cost of preference capital or K_p = 9%.

3. Cost of Debentures: K_d (after tax) = r (1 – T)
= 11 (1 – 0.3) = 7.7%.

4. Cost of Retained Earnings: K_r = K_e (1 – T_p)
= 18.125 (1 – 0.2)
= 14.5%.

(2 Marks)

(ii) Weighted Average Cost of Capital

(On the basis of Book Value Weights)

Source	Amount (Book Value) (Rs.)	Weights Capital (after tax) (%)	Cost of	WACC (%)
(1)	**(2)**	**(3)**	**(4)**	**(5) = (3) x (4)**
Equity Capital	80,00,000	0.4	18.125	7.25
Preference Capital	20,00,000	0.1	9	0.90
Debentures	60,00,000	0.3	7.7	2.31
Retained earnings	40,00,000	0.2	14.5	2.90
	2,00,00,000	**1.00**		**13.36**

Hence, WACC on the basis of Book Value Weights = 13.36%.

(2 Marks)

(iii) Weighted Average Cost of Capital
(On the basis of Market value weights)

Source	Amount (Book Value) (Rs.)	Weights Capital (after tax) (%)	Cost of	WACC (%)
(1)	**(2)**	**(3)**	**(4)**	**(5) = (3) x (4)**
Equity Capital	1,60,00,000	0.640	18.125	11.600
Preference Capital	24,00,000	0.096	9	0.864
Debentures	66,00,000	0.264	7.7	2.033
Retained earnings	-	-	-	-
	2,50,00,000	**1.000**		**14.497**

Hence, WACC on the basis of Market Value Weights = 14.497% **(2 Marks)**

Answer-3 :
Working Notes:

1. Capital employed before expansion plan :

	Rs.
Equity shares	8,00,000
Debentures (Rs. 1,20,000/12) x 100	10,00,000
Retained earnings	12,00,000
Total capital employed	30,00,000

2. Earnings before the payment of interest and tax (EBIT)

	Rs.
Profit	3,00,000
Interest	1,20,000
EBIT	4,20,000

3. Return on investment (ROI)

$$ROI = \frac{EBIT}{\text{Capital employed}} \times 100 = \frac{Rs.4,20,000}{Rs.30,00,000} \times 100 = 14\%$$

4. Earnings before the payment of interest and tax (EBIT) after expansion

After expansion, capital employed = Rs. 34,00,000
Desired EBIT = 14% x Rs.34,00,000 = Rs.4,76,000 **(0.5 x 4 = 2 marks)**

(i) Statement showing Earning Per Share (EPS)
(Under present and anticipated expansion scheme)

	Present situation	Expansion scheme Additional funds raised as	
		Debt	Equity
	Rs.	Rs.	Rs.
EBIT: (A)	4,20,000 (Refer to Working note 2)	4,76,000 (Refer to Working note 4)	476,000
Interest - Old capital	1,20,000	1,20,000	1,20,000
- New capital	-	48,000 (Rs.4,00,000 x 12%)	-
Total interest : (B)	1,20,000	1,68,000	1,20,000
EBT:{(A) - (B)}	3,00,000	3,08,000	3,56,000
Less: Tax (50% of EBT)	1,50,000	1,54,000	1,78,000
PAT	1,50,000	1,54,000	1,78,000
EPS	1.875 (Rs.1,50,000/ 80,000)	1.925 (Rs.1,54,000/ 80,000)	1.48 (Rs.1,78,000/ 1,20,000)

(2 Marks)

(ii) **Advise to the Company:** Since EPS is greater in the case when company arranges additional funds as debt. Therefore, debt scheme is better. **(2 Marks)**

Answer-4 :

Total Assets = Rs. 40 crores
Total Asset Turnover Ratio = 2.5
Hence, Total Sales = 40 x 2.5 = Rs. 100 crores

Computation of Profits after Tax (PAT)

	(Rs. in crores)
Sales	100
Less: Variable operating cost @ 65%	65
Contribution	35
Less: Fixed cost (other than Interest)	8
EBIT	27
Less: Interest on debentures (15% x 20)	3
EBT	24
Less: Tax 40%	9.6
EAT	14.4

(2 Marks)

(i) **Earnings per share**

$$\therefore \text{EPS} = \frac{\text{Rs.14.4 Crores}}{\text{1 crore equity shares}} = \text{Rs.14.40}$$

(1 Mark)

(ii) **Operating Leverage**

$$\text{Operating leverage} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{35}{27} = 1.296$$

It indicates the choice of technology and fixed cost in cost structure. It is level specific. When firm operates beyond operating break-even level, then operating leverage is low. It indicates sensitivity of earnings before interest and tax (EBIT) to change in sales at a particular level.

(1 Mark)

(iii) **Financial Leverage**

$$\text{Financial Leverage} = \frac{\text{EBIT}}{EBT} = \frac{27}{24} = 1.125$$

The financial leverage is very comfortable since the debt service obligation is small vis-à-vis EBIT.

(1 Mark)

(iv) **Combined Leverage**

$$\text{Combined Leverage} = \frac{\text{Contribution}}{\text{EBIT}} \text{ x } \frac{\text{EBIT}}{\text{EBT}} = 1.296 \text{ x } 1.125 = 1.458$$

The combined leverage studies the choice of fixed cost in cost structure and choice of debt in capital structure. It studies how sensitive the change in EPS is vis-à-vis change in sales.
The leverages - operating, financial and combined are measures of risk. **(1 Mark)**

Answer-5 :

Since the life span of each machine is different and time span exceeds the useful lives of each model, we shall use Equivalent Annual Cost method to decide which brand should be chosen.

(i) **If machine is used for 20 years**

Present Value (PV) of cost if machine of Brand XYZ is purchased

Period	**Cash Outflow (Rs.)**	**PVF@12%**	**Present Value**
0	6,00,000	1.000	6,00,000
1-5	20,000	3.605	72,100
6-10	28,000	2.045	57,260

11-15	39,000	1.161	45,279
15	(64,000)	0.183	(11,712)
			7,62,927

PVAF for 1-15 years 6.811

Equivalent Annual Cost = $\frac{Rs.7,62,927}{6.811} = Rs.1,12,014$ **(2 Marks)**

Present Value (PV) of cost if machine of Brand ABC is purchased

Period	**Cash Outflow (Rs.)**	**PVF@12%**	**Present Value**
0	4,50,000	1.000	4,50,000
1 - 5	31,000	3.605	1,11,755
6 -10	53,000	2.045	1,08,385
10	(57,000)	0.322	(18,354)
			6,51,786

PVAF for 1-10 years 5.65

Equivalent Annual Cost = $\frac{Rs.6,51,786}{5.65} = Rs.1,15,360$ **(1 Mark)**

Present Value (PV) of cost if machine of Brand ABC is taken on Rent

Period	**Cash Outflow (Rs.)**	**PVF@12%**	**Present Value**
0	1,02,000	1.000	1,02,000
1 - 4	1,02,500	3.037	3,11,293
5-9	1,09,950	2.291	2,51,895
			6,65,188

PVAF for 1-10 years 5.65

Equivalent Annual Cost = $\frac{Rs.6,65,188}{5.65} = Rs.1,17,732$ **(1 Mark)**

Decision: Since Equivalent Annual Cash Outflow is least in case of purchase of Machine of brand XYZ the same should be purchased. **(1 Mark)**

(ii) If machine is used for 5 years

(a) Scrap Value of Machine of Brand XYZ
= Rs. 6,00,000 – Rs. 2,00,000 – Rs. 6,00,000 × 0.04 × 4 = Rs. 3,04,000

(b) Scrap Value of Machine of Brand ABC
= Rs. 4,50,000 – Rs. 1,50,000 – Rs. 4,50,000 × 0.06 × 4 = Rs. 1,92,000 **(1 Mark)**

Present Value (PV) of cost if machine of Brand XYZ is purchased

Period	**Cash Outflow (Rs.)**	**PVF@12%**	**Present Value**
0	6,00,000	1.000	6,00,000
1 - 5	20,000	3.605	72,100
5	(3,04,000)	0.567	(1,72,368)
			4,99,732

(1 Mark)

Present Value (PV) of cost if machine of Brand ABC is purchased

Period	**Cash Outflow (Rs.)**	**PVF@12%**	**Present Value**

0	4,50,000	1.000	4,50,000
1-5	31,000	3.605	1,11,755
5	(1,92,000)	0.567	(1,08,864)
			4,52,891

(1 Mark)

Present Value (PV) of cost if machine of Brand ABC is taken on Rent

Period	**Cash Outflow (Rs.)**	**PVF@12%**	**Present Value**
0	1,02,000	1.000	1,02,000
1-4	1,02,500	3.037	3,11,293
5	50,000	0.567	28,350
			4,41,643

(1 Mark)

Decision: Since Cash Outflow is least in case of lease of Machine of brand ABC the same should be taken on rent. **(1 Mark)**

Answer-6 :

(a) Pattern of Raising Additional Finance

Equity = 10,00,000 × 60/100 = Rs. 6,00,000
Debt = 10,00,000 × 40/100 = Rs. 4,00,000
Capital structure after Raising Additional Finance

Sources of fund	**Amount (Rs.)**
Shareholder's funds	
Equity capital (6,00,000 – 3,00,000)	3,00,000
Retained earnings	3,00,000
Debt at 10% p.a.	1,80,000
Debt at 16% p.a. (4,00,000 F1,80,000)	2,20,000
Total funds	**10,00,000**

(2 Marks)

(b) Post-tax Average Cost of Additional Debt

K_d = I(1 – t), where 'Kd' is cost of debt, 'I' is interest and 't' is tax.
On Rs. 1,80,000 = 10% (1 - 0.5) = 5% or 0.05
On Rs. 2,20,000 = 16% (1 – 0.5) = 8% or 0.08
Average Cost of Debt (Post tax) i.e.

$$K_d = \frac{(1,80,000 \times 0.05) + (2,20,000 \times 0.08)}{4,00,000} \times 100 = 6.65\% \text{ (approx)}$$

(2 Marks)

(c) Cost of Retained Earnings and Cost of Equity applying Dividend Growth Model

$$K_e = \frac{D_1}{P_0} + g \quad \text{or} \quad \frac{D_0(1+g)}{P_0} + g$$

Then, $K_e = \frac{2(1.1)}{44} + 0.10 \quad = \frac{2.2}{44} + 0.10 = 0.15 \text{ or } 15\%$

(2 Marks)

(d) Overall Weighted Average Cost of Capital (WACC) (After Tax)

Particulars	Amount (Rs.)	Weights	Cost of capital	WACC
Equity (including retained earnings)	6,00,000	0.60	15%	9.00
Debt	4,00,000	0.40	6.65%	2.66
Total	10,00,000	1.00		11.66

(2 Marks)

Answer-7 :

Working Notes:

1. Raw Material Storage Period (R)

$$= \frac{\text{Average Stock of Raw Material}}{\text{Annual Consumption of Raw Material}} \times 365$$

$$= \frac{\frac{\text{Rs.45,000 + Rs.65,356}}{2}}{\text{Rs.3,79,644}} \times 365$$

= 53 days.

Annual Consumption of Raw Material = Opening Stock + Purchases- Closing Stock

= Rs. 45,000 + Rs. 4,00,000 – Rs. 65,356

= Rs. 3,79,644

(1 Mark)

2. Work-in-Progress (WIP) Conversion Period (W)

$$\text{WIP Conversion Period} = \frac{\text{Average Stock of WIP}}{\text{Annual Cost of Production}} \times 365$$

$$= \frac{\frac{\text{Rs.35,000 + Rs.51,300}}{2}}{\text{Rs.7,50,000}} \times 365$$

= 21 days

(1 Mark)

3. Finished Stock Storage Period (F)

$$= \frac{\text{Average Stock of Finished Goods}}{\text{Cost of Goods Sold}} \times 365$$

$$= \frac{\text{Rs.65,178}}{\text{Rs.9,15,000}} \times 365 = 26 \text{ days}$$

$$\text{Average Stock} = \frac{\text{Rs.60,181 + Rs.70,175}}{2}$$

= Rs. 65,178.

(1 Mark)

4. Debtors Collection Period (D)

$$= \frac{\text{Average Debtors}}{\text{Annual Credit Sales}} \times 365$$

$$= \frac{\text{Rs.1,23,561.50}}{\text{Rs.11,00,000}} \times 365$$

= 41 days

$$\text{Average debtors} = \frac{\text{Rs.1,12,123 + Rs.1,35,000}}{2} = \text{Rs.1,23,561.50}$$

(1 Mark)

5. Creditors Payment Period (C)

$$= \frac{\text{Average Creditors}}{\text{Annual Net Credit Purchases}} \times 365$$

$$= \frac{\left(\frac{Rs.50,079 + Rs.70,469}{2}\right)}{Rs.4,00,000} \times 365 = 55 \text{ days}$$

(1 Mark)

(i) Operating Cycle Period

= R + W + F+ D – C = 53 + 21 + 26 + 41 – 55 = 86 days

(1 Mark)

(ii) Number of Operating Cycles in the Year

$$= \frac{365}{\text{Operating Cycle Period}} = \frac{365}{86} = 4.244$$

(1 Mark)

(iii) Amount of Working Capital Required

$$= \frac{\text{Annual Operating Cost}}{\text{Number of Operating Cycles}} = \frac{Rs.9,50,000}{4.244} = Rs.2,23,845.42$$

(1 Mark)