SUGGESTED SOLUTION

IPCC NOVEMBER 2016 EXAM

FINANCIAL MANAGEMENT

Test Code - I N J1 0 5 8

BRANCH - (MUMBAI) (Date :12.06.2016)

Answer-1 :
Working Notes:
1.   **Computation of Current Assets (CA) and Current Liabilities (CL)**

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

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

∴ CA   = 1.5 CL
CA - CL   = 1,50,000
1.5 CL - CL   = 1,50,000
0.5 CL   = 1,50,000

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

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

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

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

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

Sales – 0.25 Sales   = COGS
0.75 Sales   = 10,50,000

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

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

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

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

(6 x 1 = 6 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 &Surplu	2,60,000	Current Assets:	
Current Liabilities:		Inventories	2,10,000
Bank Credit	2,00,000	Debtors	1,75,000
Other CurrentLiabilities	1,00,000	Bank & Cash	65,000
	11,35,000		**11,35,000**

(4 Marks)

Answer-2 :
Fund from Operation

Particulars	(Rs.)
Closing value of reserves & surplus	6,15,000
Less: Opening value of reserves & surplus	(3,57,000)
Profit after depreciation	2,58,000
Add: Depreciation (refer the working note)	37,000
Profit before depreciation	2,95,000
Less: Profit on sale of plant	(20,000)
	2,75,000
Add: Interim dividend	54,000
Fund from Operation	3,29,000

(3 Marks)

Fund flow statement for the year ended 31st March 2016

Particulars (Rs.)	
Sources of Fund	
Fund from Operation	3,29,000
Decrease in working capital (Balancing Figure)	3,67,000
Sale of plant	48,500
	7,44,500
Application of Fund	
Long-term Investment (Rs.4,35,000 – Rs.1,98,000)	2,37,000
Purchase of Plant (refer the working note)	1,83,500
Repayment of Debentures (Rs.3,75,000 – Rs.1,05,000)	2,70,000
Payment of interim dividend	54,000
	7,44,500

(3 Marks)

Working Note:

Plant A/c

Particulars	(Rs.)	Particulars	(Rs.)
To Balance b/d	95,000	By Bank A/c (Sale)	48,500
To P&L A/c (Profit on sale)	20,000	By Prov. for Depreciation (Balancing figure)	37,000
To Bank A/c (new purchase) (Rs.1,40,000 + Rs.43,500)	1,83,500	By Balance c/d	2,13,000
	2,98,500		**2,98,500**

(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

(1 Mark)

3. **Return on investment (ROI)**

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

(1 Mark)

4. **Earnings before the payment of interest and tax (EBIT) after expansion**
    After expansion, capital employed = Rs. 34,00,000
    Desired EBIT = 14% xRs.34,00,000 = Rs.4,76,000

(1 Mark)

(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	4,76,000	476,000
	(Refer to Working note2)	(Refer to Working note 4)	
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	1.925	1.48
	(Rs.1,50,000/80,000)	(Rs.1,54,000/80,000)	(Rs.1,78,000/1,20,000)

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

(1 Mark)

Answer-4 (a) :

(i)   Net Sales :Rs. 30 crores

EBIT Rs.3.6 crores @ 12% on sales

$$\text{ROI} = \frac{\text{EBIT}}{\text{Capital Employed}} = \frac{3.6}{10+2+6} \text{ x } 100 = 20\%$$

(1 Mark)

	Rs. in crores
EBIT	3.6
Interest on Debt	0.9
EBT	2.7
Less : Tax @ 40%	1.08
EAT	1.62
Less : Preference dividend	0.26
Earnings available for Equity Shareholders	1.36

Return on equity = 1.36/10x 100=13.6%

(2 Marks)

Segments due to the presence of Preference Share capital and Borrowing (Debentures)

Segment of ROE due to preference capital : [.20(1-.4)-.13] x .2 =-.002

Segment of ROE due to Debentures: [.20 (1-.4) - .15 (1-.4)] x .6 =.018

or -.2% + 1.8% =1.6%

The weighted average cost of capital is as follows

	Source	Proportion	Cost (%)	WACC(%)
(i)	Equity	10/18	13.60	7.56
(ii)	Preference shares	2/18	13.00	1.44
(iii)	Debt	6/18	9.00	3.00
	Total			**12.00**

(1 Mark)

(ii)   Degree of Financial Leverage

$$= \frac{\text{EBIT}}{\text{EBIT - Interest - Preference dividend / (1-t)}}$$

$$= \frac{3.6}{3.6-0.9-0.43} = 1.5859$$

Degree of Combined Leverage   = DFL x DOL

3 = 1.5859 x DOL

$$\text{DOL} = \frac{3}{1.5859}$$

Degree of Operating Leverage =1.8917

(2 Marks)

Answer-4 (b) :

(i)   Net Present Value at different discounting rates

Project	0% Rs.	10% Rs.	15% Rs.	30% Rs.	40% Rs.
C	8,000	4,139	2,654	-632	-2,158
	{Rs. 2,000	{Rs. 2,000 x 0.909	{Rs. 2,000 x 0.8696	{Rs. 2,000 x 0.7692	{Rs. 2,000 x0.7143
	+Rs. 4,000	+Rs. 4,000 x 0.8264	+ Rs. 4,000 x 0.7561	+ Rs. 4,000 x 0.5917	+ Rs. 4,000 x 0.5102
	+Rs. 12,000	+Rs. 12,000 x 0.7513	+ Rs. 12,000 x 0.6575	+Rs. 12,000 x 0.4552	+ Rs. 12,000 x 0.3644
	-Rs. 10,000}	-Rs. 10,000}	- Rs. 10,000}	- Rs. 10,000}	- Rs. 10,000}

Ranking	I	I	II	II	II
D	6,000	3,823	2,937	833	- 233
	{Rs. 10,000	{Rs. 10,000 x 0.909	{Rs. 10,000 x 0.8696	{Rs. 10,000 x 0.7692	{Rs. 10,000 x 0.7143
	+Rs. 3,000	+Rs. 3,000 x 0.8264	+Rs. 3,000 x 0.7561	+ Rs. 3,000 x 0.5917	+Rs. 3,000 x 0.5102
	+Rs. 3,000	+Rs. 3,000 x 0.7513	+Rs. 3,000 x 0.6575	+ Rs. 3,000 x 0.4552	+Rs. 3,000 x 0.3644
	-Rs. 10,000}	- Rs. 10,000}	- Rs. 10,000}	- Rs. 10,000}	- Rs. 10,000}
Ranking	II	II	I	I	I

The conflict in ranking arises because of skewness in cash flows. In the case of Project C cash flows occur later in the life and in the case of Project D, cash flows are skewed towards the beginning.

At lower discount rate, project C's NPV will be higher than that of project D. As the discount rate increases, Project C's NPV will fall at a faster rate, due to compounding effect.

After break even discount rate, Project D has higher NPV as well as higher IRR.

(5 Marks)

(ii)   If the opportunity cost of funds is 10%, project C should be accepted because the firm's wealth will increase by Rs. 316 (Rs. 4,139 - Rs. 3,823)

The following statement of incremental analysis will substantiate the above point.

Project	Cash Flows (Rs.)				NPV at 10% Rs.	IRR 12.5%
	C0 Rs.	C1 Rs.	C2 Rs.	C3 Rs.		
C-D	0	-8,000	1,000	9,000	316	0
					{-8,000 x 0.909	{-8,000 x 0.88884
					+1,000 x 0.8264	+ 1,000 x 0.7898
					+ 9,000 x 0.7513}	+ 9,000 x 0.7019}

Hence, the project C should be accepted, when opportunity cost of funds is 10%.

(3 Marks)

Answer-5 (a) :

Since the amount of revenue generated from each category of customer is not given in the question. Let us consider Rs.100 as the amount of revenue generated from each type of customer. Therefore, Rs.100 shall be taken as the basis for reappraisal of Company's credit policy.

Statement showing the Evaluation of credit Policy

Particulars			Classification of Customers			
			1	2	3	4
A.	Expected Profit:					
	(a)	Revenue	100	100	100	100
	(b)	Total Cost other than Bad Debt:				
		(i) Cost of Goods Sold	85	85	85	85
		(ii) Fixed Cost	5	5	5	5
			90	90	90	90
	(c)	Bad Debt	0	2.00	10.00	20.00
	(d)	Expected Profit [(a)-(b)-(c)]	10	8.00	0	(10.00)
B.	Opportunity Cost of Investment in Receivables		1.66	1.55	1.48	2.96
C.	Net Benefits [A-B]		8.34	6.45	(1.48)	(12.96)

(4 Marks)

Recommendation: The reappraisal of company's credit policy indicates that the company either follows a lenient credit policy or it is inefficient in collection of debts. Even though the company sells its products on terms of net 30 days, it allows average collection period for more than 30 to all categories of its customers.

The company can continue with customers covered in categories 1 and 2 since net benefits are favourable. The company either should not continue with customer covered in categories 3 and 4 or should reduce the bad debt % by at least 1.48% and 12.96% respectively since net benefits are unfavourable to the extent of 1.48% and 12.96% of sales respectively. The other factors to be taken into consideration before changing the present policy includes (i) past performance of the customers and (ii) their credit worthiness.

Working Note: Calculation of Opportunity Cost

$$\text{Opportunity Cost} = \text{Total Cost} \times \frac{\text{Average collection period}}{365} \times \text{Rate of interest}$$

For Category 1 $= \text{Rs.}90 \times \frac{45}{365} \times \frac{15}{100} = \text{Rs.}1.66$

For Category 2 $= \text{Rs.}90 \times \frac{42}{365} \times \frac{15}{100} = \text{Rs.}1.55$

For Category 3 $= \text{Rs.}90 \times \frac{40}{365} \times \frac{15}{100} = \text{Rs.}1.48$

For Category 4 $= \text{Rs.}90 \times \frac{80}{365} \times \frac{15}{100} = \text{Rs.}2.96$

(4 x 0.5 = 2 Marks)

Answer-5 (b) :
Statement of Evaluation of Credit Policies of PTX Limited (based on Total CostApproach)

	Present Policy	Policy Option I	Policy Option II
Sales Revenue	30,00,000	42,00,000	4,50,0000
Less: Variable Cost @70%	21,00,000	29,40,000	31,50,000
Contribution	9,00,000	12,60,000	13,50,000
Less: Other Relevant Costs			
Bad Debt Losses	(90,000)	(2,10,000)	(2,70,000)
Investment Cost	(1,05,000)	(1,96,000)	(2,62,500)
(VC ÷ DTR) × 20%			
Profit	7,05,000	8,54,000	8,17,500

(4 Marks)

Recommendation:PTX Limited is advised to adopt Policy Option I.
(Note: In the above solution, investment in accounts receivable is based on total cost of goodssold on credit. Since fixed costs are not given in the problem, therefore, it is assumed thatthere are no fixed costs and investment in receivables is determined with reference to variablecosts only. The above solution may alternatively be worked out on the basis of incrementalapproach. However, the recommendation would remain the same.)