Institute of Actuaries of India

Subject CT2 – Finance and Financial Reporting

May 2013 Examinations

INDICATIVE SOLUTIONS

Solution 1 :

D) Matching concept **[2 Marks]**

Solution 2 :

D) All of the above. **[2 Marks]**

Solution 3 :

B) 1,000 **[2 Marks]**

Solution 4 :

D) Commercial paper **[2 Marks]**

Solution 5 :

A)

$$\left(\frac{\text{Market Value (MV) of Debt}}{\text{MV of (Debt + Equity)}}\right) \times \left(\text{Net cost of debt}\right) + \left(\frac{\text{MV of Equity}}{\text{MV of (debt + equity)}}\right) \times \left(\text{Cost of equity}\right)$$

[2 Marks]

Solution 6 :

B) 5.1000 **[2 Marks]**

Solution 7 :

C) All of the above **[2 Marks]**

Solution 8 :

D) Rs. 36.36 **[2 Marks]**

Solution 9 :

A) Gilts **[2 Marks]**

Solution 10 :

C) Increase or decrease in NPV **[2 Marks]**

Solution 11 :

i) The company will be able to sell or make major alterations to specific secured assets mentioned in the legal documentation for the mortgage debenture only with the prior permission of the mortgage debenture holders.

In case of a floating charge debenture, the company can change the secured assets in the normal course of business.For example, it can sell the assets, so long as they are replaced by equally satisfactory assets from the debenture holders' viewpoint.

ii) **(a)** Remedies available to mortgage debenture holders:

1) When a company fails to make an interest or capital payment, the debenture holders can apply to the courts to make the floating charge become a fixed charge.
This is called "crystallising".

2) Appoint a receiver to intercept income from secured assets which will be used to settle the claims of the debenture holders.

3) Take possession of secured assets to sell it.

4) If the security proves insufficient to meet their claims, they can sue the company for the balance amount and will rank at par with other unsecured creditors of the company.

(b) Remedies available to the unsecured loan stock holders:

1) Sue the company for the amount due which in effect means petitioning for liquidation of the company.
The unsecured loan stock holders will rank at par with other unsecured creditors of the company.

iii) Although the friend has a valid point in saying that unsecured loan stock is risky because there is no specific security assigned to it and since it ranks after debentureholders and at par with other unsecured creditors, there is a significant possibility that in case of insolvency of the company, very little or nothing will be received by the holders.

However the following protect the unsecured loan stock holders to some extent:

1) Appointment of a trustee who monitors the servicing of the unsecured loan stocks.

2) Restrictions on further borrowing by the company which are generally found in the trust deed

3) Since the servicing of the unsecured loans is dependent on the profitability of the company, there is no harm in buying unsecured loan stocks of companies in stable sectors which are making sizeable profits. The interest coverage ratio, the debt equity ratio and net asset value per share of the issuing company could help identify a good company where the chances of default are minimal. Analysing profitability ratios such as EPS, ROCE and the trends in these ratios over the last few years will be useful.

4) Due to the inherent riskiness of the instrument, returns are usually higher as compared to other secured form of debt. So an investor could allocate a relatively small portion of his total wealth to investments in unsecured debt and earn the extra returns. Besides, diversification between several unsecured debt issues will reduce the risk of losing money.
5) Unsecured loan stock holders rank above share holders and hence have some level of security

[11 Marks]

Solution 12 :

Factors influencing the dividend policy of the company:

1) Reaction of the stock market to fluctuations in declared dividends. So managers tend to hold back some profits in good years to be used to reward shareholders during adverse phases of the economic cycle
2) Availability of cash. A huge cash pile may lead to a hostile takeover and hence paying out dividends may be preferred.
3) Tax position of the company and its shareholders and the relative taxation on capital gains and dividends.
4) Requirements for any planned projects and future growth prospects of the industry and the company.
5) Past dividend payouts
6) Ability to borrow during adverse times.

[3 Marks]

Solution 13 :

Limitations of historical cost accounting:

1) Cost of goods sold is generally calculated at historical costs and hence may generally lead to overstatement of profits (assuming that due to inflation, the cost of both raw material and direct wages increases).
2) Depreciation will be charged on the historical cost of the asset rather than allowing for the cost of replacing the existing asset.
3) During times of inflation, interest paid is partly a compensation for erosion of the value of money borrowed. As a result the value of the future liability on account of the loan is actually reducing but the entire interest payment is being charged against the current year's revenues thereby understating profits now.
4) Profits will generally increase partly due to inflation. So although the profits of a company may increase year on year, care needs to be taken while evaluating the true growth after considering the inflation during the year.
5) Assets such as land and buildings tend to be largely undervalued under historical cost accounting because such real assets tend to appreciate significantly over years.
6) Investments are valued at acquisition cost and the profits/losses are booked only on actual sale of investments. However a counter argument would be that marking investments (such as equity) to market may lead to volatality in the financial position over years.

7) Comparison between financial statements of different companies established at different times becomes difficult as non-current assets of an older company will generally be valued lower that similar assets of a relatively newer company.

[6 Marks]

Solution 14 :

In theory, incorporation would limit the liability of the consultants.

Lenders would have a claim against the company's assets but not those of the individuals who own it.

This advantage could prove costly though.

Lenders will perceive a higher risk. They might respond by charging a higher rate of interest which will, eventually lead to lower profits for the consultants.

They might also seek additional security over assets, thereby imposing some constraints on the consultants freedom to trade.

They might even demand personal guarantees from the consultants so that they become liable for the loans despite the incorporation.

Even if the lenders did not take action to protect themselves, limited companies are subject to some additional regulatory requirements that have to be set against the benefits of limited liability.

For example, limited companies are subject to some reporting and filing requirements that partnerships are not.

This would involve paying to put trading information in the public domain, where it might prove useful to competitors or other parties.

[4 Marks]

Solution 15 :

a)

1. acting as the "lender of last resort"
2. acting as the bankers' bank (this allows easy daily settlement of inter-bank debt)
3. Maintaining foreign reserves, and using them to influence exchange rates.
4. Setting of monitory policy
5. Setting up banking regulations
6. Implementation of government borrowing
7. Printing and minting of notes and coins

b)

1. **<u>Impact on personal sector</u>:**

- A major direct effect of higher interest rates for the *personal sector* is likely to arise via the increase in mortgage loan interest payments, which will reduce disposable income and hence personal sector expenditure.

- Consumers' expenditure may also be discouraged by higher rates on credit facilities and higher rates of interest may also encourage higher levels of saving.

2. **<u>Impact on business sector</u>**

- The impact on the *business sector* is likely to be detrimental since capital investment and economic growth prospects will be reduced. This is due to the increased opportunity cost of committing funds for investment and the higher cost of borrowing.

- The reduction in anticipated levels of economic activity, and higher domestic currency exchange rates, will reduce the viability of capital investment projects.

- With higher interest rates, fewer projects being considered will demonstrate a positive net present value. Investment is therefore likely to be lower

- Higher levels of interest payments on outstanding debt will reduce corporate profitability, as existing borrowing costs are a large element of ongoing costs for many companies.

- Lower levels of consumption and investment are likely to lead in turn to lower rates of economic growth. All of these features are likely to result in reduced employment prospects and a slower rate of improvement in living standards.

[9 Marks]

Solution 16 :

A.

The importance of capital budgeting is due to

- Complexity of the analysis involved
- Cost of mistaken decisions
- It is difficult to project prospective cashflows arising from any project with great confidence
- Further complications arises to allow for different scenarios, selection between alternate capital assets and methods of financing

B.

Projection of cashflows under outright purchase of plane scenario

Scenario 7% growth rate

Year	Revenue	Operating Cost	Interest Cost	Fixed Cost	Depreciation	Net profit	Tax	Net Cashflow
1	250	150	25	5	25.00	45.00	13.50	56.50
2	260	156	25	5	22.50	51.50	15.45	58.55
3	270	162	25	5	20.25	57.75	17.33	60.68
4	280	168	25	5	18.23	63.78	19.13	62.87
5	290	174	25	5	16.40	69.60	20.88	65.12

Scenario 8% growth rate

Year	Revenue	Operating Cost	Interest Cost	Fixed Cost	Depreciation	Net profit	Tax	Net Cashflow
1	275	165	25	5	25.00	55.00	16.50	63.50
2	285	171	25	5	22.50	61.50	18.45	65.55
3	295	177	25	5	20.25	67.75	20.33	67.68
4	305	183	25	5	18.23	73.78	22.13	69.87
5	315	189	25	5	16.40	79.60	23.88	72.12

Calculation of NPV

Time	7% Growth rate	8% Growth rate	Discount factor
0	-	-	1.00
1	56.50	63.50	0.93
2	58.55	65.55	0.81
3	60.68	67.68	0.71
4	62.87	69.87	0.61
5	65.12	72.12	0.53
5	-102.38	-102.38	0.50

NPV of scenario	165.31	190.48	
Probability	0.6	0.4	
NPV of project			175.38

Calculation of NPV under lease of plane scenario

7% growth rate

Year	Revenue	Operating Cost	Lease Rent	Fixed Cost	Net profit	Tax	Net Cashflow
1	250	150	50.00	5	45.00	13.50	31.50
2	260	156	52.50	5	46.50	13.95	32.55
3	270	162	55.13	5	47.88	14.36	33.51
4	280	168	57.88	5	49.12	14.74	34.38
5	290	174	60.78	5	50.22	15.07	35.16

8% growth rate

Year	Revenue	Operating Cost	Lease Rent	Fixed Cost	Net profit	Tax	Net Cashflow
1	275	165	50.00	5	55.00	16.50	38.50
2	285	171	52.50	5	56.50	16.95	39.55
3	295	177	55.13	5	57.88	17.36	40.51
4	305	183	57.88	5	59.12	17.74	41.38
5	315	189	60.78	5	60.22	18.07	42.16

Calculation of NPV

Time	7% Growth rate	8% Growth rate	Discount factor
0	-	-	1.00
1	31.50	38.50	0.93
2	32.55	39.55	0.81
3	33.51	40.51	0.71
4	34.38	41.38	0.61
5	35.16	42.16	0.53
5	-	-	0.50
NPV	119.22	144.39	
Probability	0.6	0.4	
NPV of project			129.29

The project is viable and the company should proceed with it.

The company should opt for the purchase of the planes because the NPV under the purchasing of the planes scenario is higner than leasing.

[25 Marks]

Solution 17 :

a)

Statement showing the required provision for bad debts

Particulars	Amount '000	Marks
Balance as on 1st April 2012	1,150	
(Add) Sales during the year originally booked	8,420	0.5
	9,570	
(Less) Payment received during the F.Y.	5,000	0.5
(Less) Last dispatch cancelled	1,020	1
Amount recoverable as on 31st March 2013	3,550	

(-) Estimated Amount recoverable - 50%	1,775	0.5
Provision for bad debts	1,775	0.5

b)

Income statement of MAB Ltd for the year ended on 31st March 2013.

Particulars	Amount '000	Amount '000	Marks
Revenue	4,45,000		
(Less)Returns Inward	3,850		
(Less) Cancelled Sale to M/s Olympus and Sons	1,020	4,40,130	0.5 for deducting cancelled sale
Cost of Sales		3,30,490	
Opening Inventory	12,250		
(Add) Purchases	2,45,400		
(Less) Closing Inventory	13,975		
(Less) Inventory in transit	850		1
	2,42,825		
Wages (56,750 - 1,750)	55,000		1
Octroi	4,800		
Electricity	20,495		
Depreciation on Building	940		0.5
Depreciation on Plant and Machinery	6,430		0.5
Gross Profit		1,09,640	1
Distribution Costs		22,740	
Advertising Expenses	4,190		
Transport outward charges	15,750		

Entertainment expenses	2,800		
Administrative Expenses		21,515	
Salaries	13,875		
Auditor's fees	1,290		
Office expenses	4,200		
Directors' remuneration	2,150		
Provision for Doubtful Debts		1,775	0.5
Operating Profit		63,610	1
Total distributable earnings		63,610	

c)

Statement of Financial position of MAB Ltd. as on 31st March 2013

Particulars	Amount '000	Amount '000	Amount '000	Marks
ASSETS				
Non-Current Assets			78,930	
Building	25,000			
(Less) Depreciation Reserve(6,200+940)	7,140	17,860		0.5 for final balance
Plant and machinery	85,000			
(Less) Depreciation Reserve (20700+6430)	27,130	57,870		0.5 for final balance
Investments		3,200		0.5
Current Assets			1,38,180	
Inventory		14,825		0.5
In godowns	13,975			
In transit	850			
Trade receivables		1,02,505		1 for final balance
Balance given	1,05,300			
(-) Sale cancelled to M/s Olympus & Sons	1,020			
(-) Provision for doubtful debts	1,775			
Cash and bank balances		20,850		0.5
Total Assets			2,17,110	
EQUITY AND LIABILITIES				
Share capital (15000+4000)		19,000		1
Other Reserves-Share premium A/c		3,200		1

Retained Earnings		124,310		0.5 for final balance
Opening Balance	60,700			
(Add) Current year's profits	63,610			
Total Equity			146,510	
Non Current Liabilities			20,150	0.5
HSFC Loan		20,150		
Current Liabilities			50,450	0.5
Trade payables		50,450		
Total Equity and Liabilities			217,110	

D) Weighted average number of shares outstanding= 1,500,000+(400,000*6/12) =1,700,000

EPS=63,610,000 ÷ 1,700,000 = Rs.37.42

Assumption: The share issue process was fully completed on 1st October 2013.

[22 Marks]

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