

# **Institute of Actuaries of India**

**Subject CT2 – Finance and Financial Reporting**

**November 2011 Examinations**

**INDICATIVE SOLUTIONS**

- |       |     |
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| 1. C  | [2] |
| 2. B  | [2] |
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| 4. D  | [2] |
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11.

**(a) Define the following:-****i. Beta Value –**

A measure of a stock's volatility relative to movements in the whole market. Usually defined as the covariance of the return on the stock with the return on the market, divided by the variance of the market return.

**ii. Chinese Walls –** Regulations intended to prevent conflicts of interest in integrated security firms.**iii. Covenant –** An agreement that is legal & binding on the parties involved. The expression is often used in association with corporate debt, because the borrower is bound to the terms of the agreement. The expression is also used in property investment because the tenant or lessee is bound to the terms of the lease agreement.**iv. Puttable Bond –** A bond where the holder has the right to sell it back to the insurer at certain predetermined times for a predetermined price.**(b) Payment received by factor is –**

<u>Name of Customer</u>	<u>Amount</u>	<u>Date</u>
• Simran Enterprises	Rs. 8,500/-	1 <sup>st</sup> Jan 2011
• Radhika Enterprises	Rs. 38,250/-	16 <sup>th</sup> Jan 2011
• Swati Enterprises	Rs. 17,000/-	1 <sup>st</sup> Mar 2011
• Poornima Enterprises	Rs. 42,500/-	1 <sup>st</sup> May 2011
• Janavi Enterprises	Rs. 12,750/-	1 <sup>st</sup> June 2011

Total Rs 1, 19,000/=

Payment retained by factor Rs 1, 40,000/- less 1, 19,000/- = Rs.21, 000/-.

Interest @ 2% per month, for loan -

Simran Enterprises	– 2,500 x 2% x 1 =	50	
	– 7,500 x 2% x 3 =	<u>450</u>	500

Radhika Enterprises	– 20,000 x 2% x 1.5 =	600	
	– 25,000 x 2% x 2.5 =	<u>1,250</u>	1,850
Swati Enterprises	– 8,000 x 2% x 1 =	160	
	– 8,000 x 2% x 2 =	320	
	– 4,000 x 2% x 4 =	<u>320</u>	800
Poornima Enterprises	– 40,000 x 2% x 1 =	800	
	– 10,000 x 2% x 2 =	400	1200
Janavi Enterprises	– 15,000 x 2% x 1 =	<u>300</u>	300

Total = 4,650/-

[0.50 marks each max upto 4.50]

The factor will repay back Rs. 16,350/- to company XYX Ltd after deducting Rs. 4,650/- towards interest payment.

[8]

12.

1. The hire purchase company repossesses its machinery.
2. Mortgage debenture holders receive payment from the proceeds of the assets charged to them, *ie* the factory. This is not necessarily a comfort to them. If the widget industry is in serious decline, the factory and its contents (widget-making machinery) may be almost worthless.
3. Floating-charge debenture holders (together with fixed-charge debenture holders should the fixed charge prove to be insufficient) have first claim to the remaining assets. As soon as the court decides that the company should be wound up, the floating charge is crystallised into a fixed charge.
4. Employees receive any arrears in their wages. The employees of a company have first call on the *company's* assets.
5. Other creditors come next. This includes the bank and the trade suppliers and unsecured loan stock holders.
6. If anything is left, preference shareholders are paid next.
7. Ordinary shareholders will receive whatever is left after the rest of the claimants have been paid. As you can imagine, this may not be very much. Often it will be zero.

[6]

13.

<u>Long term Debt</u>	= 0.5 =	<u>Long term Debt</u>	
Net worth		200000	
Long term Debt	100000		
Total Liabilities and net worth	=400000		
So Total Assets	=400000		
<u>Sales</u>	= 2.5 =	<u>Sales</u>	
Total Assets		400000	
Sales	=1000000		
Cost of sales	=1000000*(1-0.1)		
	=900000		
<u>Cost of sales</u>	= 9 =	<u>9000000</u>	
Inventory		Inventory	
Inventory	=100000		
<u>Debtors * 360</u>	= 18 =	<u>Debtors * 360</u>	
Sales		1000000	
Debtors	=50000		
<u>Cash+50000</u>	= 1		
100000			
Cash	=50000		
Plant	=200000		
Projected Balance sheet			
Payables	100000	Cash	50000
Long term Debt	100000	Debtors	50000
Equity shares	100000	Stock	100000
Profit	100000	Plant	200000
Total Liabilities and Equity	<u>400000</u>	Total Assets	<u>400000</u>

[10]

14.

$r_i$  to be the actual measured returns for stock  $i$ , and

$r_m$  to be the market returns over the same periods,

$\bar{r}_i$  to be the average of the measured returns of stock  $i$

$\bar{r}_m$  to be the average of the measured returns of the market

$\hat{\sigma}_m$  to be the estimated standard deviation of the market returns

$\hat{\sigma}_{i,m}$  to be the estimated covariance between the returns of stock  $i$  and returns of the market

We can then find:

$$\hat{\sigma}_m^2 = \frac{\sum (r_{mj} - \bar{r}_m)^2}{n-1}$$

$$\hat{\sigma}_{i,m} = \frac{\sum [(r_{ij} - \bar{r}_i) \times (r_{mj} - \bar{r}_m)]}{n-1}$$

and hence estimate:

$$\hat{\beta}_i = \frac{\hat{\sigma}_{i,m}}{\hat{\sigma}_m^2}$$

[0.25mark for each definition, 1 mark each for SD and covariance and 1.5 mark for Beta]

[5]

15. (a) Scenario's under which companies may be clubbed as group companies –

- Business activities of the group members are closely related to one another, with group members supplying others with products or components, or
- Different group members offering competitive range of products.
- It is also common for group members to provide fellow members with finance.
- Even in case of industrial conglomerates, where there is no direct link b/w the businesses of the members, all of the companies are under the control of the same senior management.

Shareholders will be interested in consolidated accounts because –

- It would be illogical for most purposes to view the group as being anything other than a single entity.
- To evaluate the performance of the group as a whole rather than a unit.

(b) It is a process of totaling the various items in the income statement and statement of financial position of individual group members.

Certain balances in the statements of the individual group members arise from relationships within the group and must be cancelled out before the figures can be meaningfully combined.

[5]

16. a)

Operating Profit	=	50, 00,000
Depreciation	=	10, 00,000
Increase in inventories	=	- 56,000
Increase in Trade and other receivables	=	- 60,000
Decrease in Trade and other payables	=	<u>- 150,000</u>
Cash generated from operating activities	=	<u>57, 34,000</u>

b)

<i>Institution</i>	Investment Trusts	Unit Trusts	Building societies
Role	Pooled investment vehicle, channels investor's money into the stock market and other (mainly long term) assets	Pooled investment vehicle, channels investor's money into the stock market	Channel private Individuals excess short term cash to private individuals to borrow to buy a house.
Source of Funds	Private Individuals and some institutions buy shares. Also raise debt finance.	Private Individuals and some institutions buy units. Unit trusts do not borrow.	Deposits from private individuals with a small, but increasing, amount from the money and the bond markets.
Application of Funds	Invest mainly in the longer term markets	Invest mainly in the longer term markets	Grant house purchase mortgages and some personal loans.  Surplus cash is invested in short – dated gilts and local authority bonds, other banks and building societies (using certificate of deposits).

[6]

17. (a)  
(I).

Feasible combination	Outlay (in Lakhs)	NPV (in Lakhs)
A	18.0	7.5
B	15.0	6.0
C	12.0	5.0
D	7.5	3.6
E	6.0	3.0
A&C	30.0	12.5
A&E	24.0	10.5
A&D	25.5	11.1
B&D	22.5	9.6
B&E	21.0	9.0
C&D	19.5	8.6
C&E	18.0	8.0
B,D & E	28.5	12.6
C, D & E	25.5	11.6

[0.5 mark for each right combination along with right corresponding values. Deduct 0.5 marks for wrong combination. If combination is right but values are wrong then no mark.]

(II) B, D & e Give highest NPV so should be selected.

- 17 (b) (I)

(I)	Book value of old system	25000- 25000/10*5	12500	
	Sale value		5000	
	Loss from sale		7500	
	Tax benefit on loss	7500*.3	2250	
	Cash outflow on new system	50000-5000-2250	42750	

(II)	Increase in sale	100000*0.1	10000	
	Reduction in costs		5000	
	Depreciation Old system	2500		
	Depreciation New system	10000		
	Excess Depreciation	7500	7500	
	Total Taxable profit		7500	
	Tax		2250	
	Net Cash inflow		12750	
	NPV		48333	

(III) PV of benefits is more than PV of out go by 5583 so new system should be bought.

[20]

18. a)

- i. Value of Plant as on 31<sup>st</sup> March'2009 is  
 Plant acquired at Cost 5 crore Less Acc Depreciation 4.15 cr = Rs. 85, 00,000  
 Less: Depreciation for 2009 – 2010 = Rs. 25, 00,000  
 Value as on 31<sup>st</sup> March'2010 = Rs. 60, 00,000  
 Value in use at 31<sup>st</sup> March'2010 = Rs. 24, 50,000  
 (Rs 35 lakhs less 35%)  
 Value to be written off at 31<sup>st</sup> March'2010 = **Rs. 35, 50,000**
- ii. Value to be written off at 31<sup>st</sup> March'2010 before any reserves  
 = Rs. 35, 50,000  
 Less: Revaluation Reserve = Rs. 12, 00,000  
 Value to be written off at 31<sup>st</sup> March'2010 = **Rs. 23, 50,000**

b)

Cash Flow statement for the year ended 31<sup>st</sup> March'2011 –

**Cash Flow from operating activities –**

- Cash receipt from customers (W.N.1) - 32,03,000
- Less Cash paid to suppliers – (W.N.2) – (7,95,000)
- Less cash paid for expenses (W.N.3) – (12,48,000)
- Cash generated from operations 11,60,000
- Income tax paid (Rs 3,30,000 – Rs 22,500) (3,07,500)
- Net cash from operating activities **8,52,500**

**Cash Flow from investing activities –**

• Sale of furniture –	12,000
• Purchase of machinery –	<u>(3,30,000)</u>
• Net cash used in investing activities –	<u><b>(3,18,000)</b></u>

**Cash Flow from financing activities –**

• Proceed from issue of equity shares –	7,20,000
• Redemption of 8% preference shares –	(10,30,000)
• Dividend paid ( Rs 40,000 + Rs 1,10,000) –	1,50,000
• Dividend distribution tax paid –	<u>(22,500)</u>
• Net cash used in investing activities –	<u><b>(4,82,500)</b></u>

**Net increase in cash and cash equivalents –** **52,000**

**Add: Cash and cash equivalent as on 31<sup>st</sup> March'2010 (b/f) –** **73,000**

**Cash and cash equivalent as on 31<sup>st</sup> March'2011** **1,25,000**

**Working Notes: -**

1) Cash Sales = 11.50 Lakhs

Credit Sale = Total sale Less Cash Sale (32 Lakhs – 11.50 Lakhs = 20.50 Lakhs)

Cash received from customers = Opening Balance + Credit Sale – Closing Balance  
= 1.5 Lakhs + 20.50 Lakhs – 1.47 Lakhs = 20.53 Lakhs

Cash from customers – Cash Sales + cash received from customers

= 11.50 + 20.53 = 32.03 Lakhs

2) Cash Purchases = 0.60 Lakhs

Credit Purchase = Total Purchase Less Cash Purchase (7.4 Lakhs = 8 Lakhs – 0.60 Lakhs)

Payments to suppliers = Opening Balance + Credit Purchase – Closing Balance

= 0.78 lakhs + 7.40 Lakhs – 0.83 Lakhs = 7.35 Lakhs

Cash paid to suppliers – Cash Purchases + payments to suppliers

= 0.60 + 7.35 = 7.95 Lakhs

3) O/s expenses at beginning + expenses charged to P&L – O/s expenses at the end

= 0.63 Lakhs + 12.40 Lakhs – 0.55 Lakhs

= 12.48 Lakhs

[20]

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