

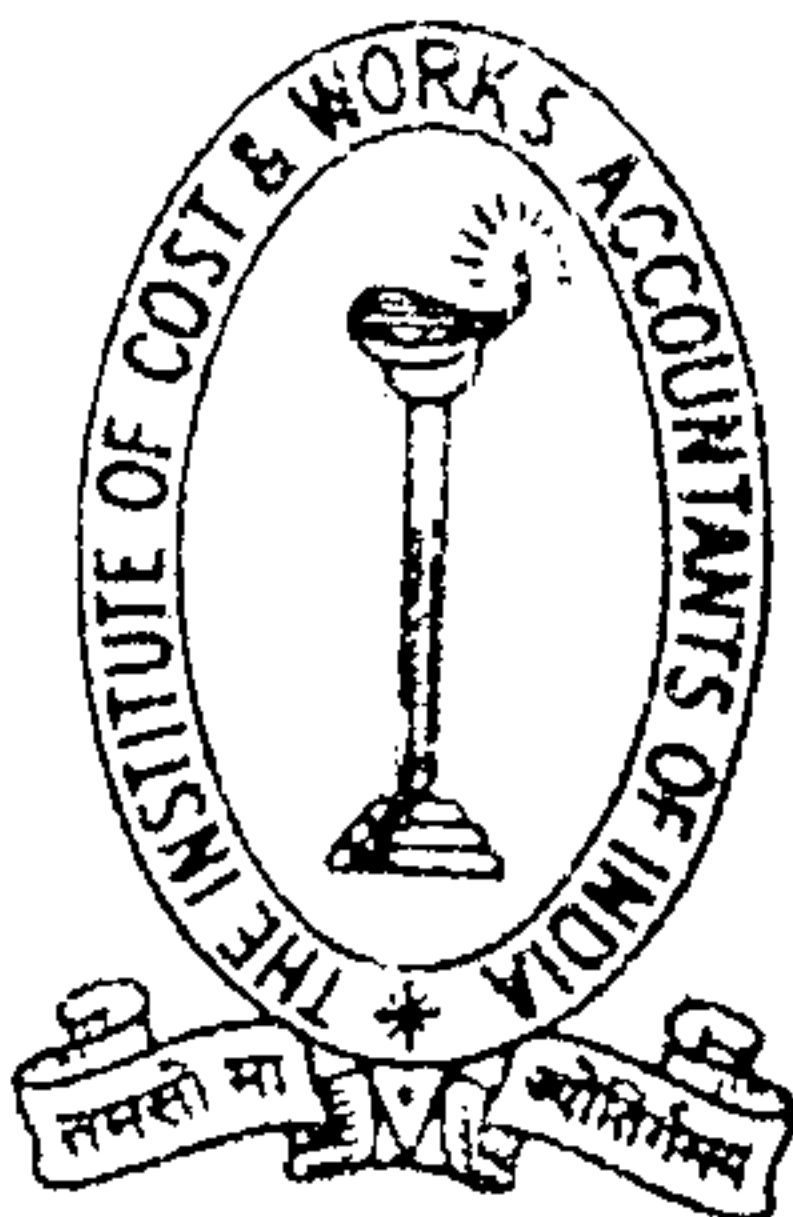
SUGGESTED ANSWERS TO QUESTIONS

(REVISED SYLLABUS)

SET AT THE
FINAL EXAMINATION

DECEMBER 2006

STAGE IV



THE INSTITUTE OF
COST AND WORKS ACCOUNTANTS OF INDIA
12, SUDDER STREET, KOLKATA- 700 016

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GUIDELINES TO STUDENTS

- 1. Students are advised to consult Study Notes and Text Books supplemented by the Suggested Answers.
- 2. Working Notes should be a part of Answers.
- 4. Assumptions should be logical and clearly stated in the Answers.

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FINAL EXAMINATION – STAGE – IV
(REVISED SYLLABUS)

SUGGESTED ANSWERS TO QUESTIONS
DECEMBER 2006

PAPER – 17 : MANAGEMENT ACCOUNTING – DECISION MAKING

Full Marks – 100

Attempt Question No. 1 (carrying 20 marks) and any five (each carrying 16 marks) from the rest

1. In each of the cases given below one out of the four answers is correct. Indicate the correct answer (= 1 mark) and give your working/reasons in support of your answer (= 3 marks):
- (a) Market research has revealed that the maximum demand lies for products X and Y. The standard variable costs per unit of the products are as follows:

	X	Y
	Rs	Rs
Materials (Rs 40 per kg)	200	160
Other variable costs	<u>400</u>	<u>440</u>
Total variable costs	<u>600</u>	<u>600</u>

The Management Accountant determined the optimal production plan by using graphical linear programming .He noticed that the optimal plan was given at any point on the part of the feasible region that was formed by the constraint line for the availability of materials.

If the selling price of Product X is Rs 1,000, the selling price of Product Y is (Rs)

- A 800
- B 860
- C 920
- D 980

4

- (b) In a project consisting of ten activities, an activity M with a duration of 17 days starts with event 1 and ends with event 2. If the earliest occurrence time and the latest occurrence time of event 2 are the 27th and the 46th day respectively and the total float of the activity is 20 days, then free float of the activity is

- A 0 (zero) day
- B 1 day
- C -20 days
- D +20 days

4

c) A company which sells three products furnishes the following sales information for November, 2006:

Product	Units	Budgeted Price/unit Rs	Units	Actual Price/unit
X	200	50	210	52
Y	300	25	330	24
Z	500	18	440	19

The expected size of the market was 5,000 units and the size of the market for November, 2006 was 5,300 units.

The market share variance and sales mix variance are:

	Market share variance Rs		Sales mix variance Rs
A	1,590 F		2,120 A
B	170 F		1,590 F
C	2,120 A		700 F
D	530 A		1,420 A

d) A company is preparing a quotation for a new product. The time taken for the first unit is 30 hours. The company expects 85% learning curve (index is - 0.2345). The company desires that the quotation should be based on the time taken for the final output within the learning period which is expected to end after the company has produced 200 units.

The time per unit of product to be used for the quotation is:

- A 13.34 hours
- B 25.50 hours
- C 30.00 hours
- D 6.67 hours

e) The normal capacity of a company is 5,000 units of product P per month. The company planned to produce an output of 4,800 units in November 2006 and accordingly prepared the following budget of expenses:

	Rs
Variable direct costs	48,000
Variable production overheads	19,200
Fixed production overheads	40,000
Total	1,07,200

The company had an opening stock of 400 units on 1st November 2006 and at the end of November 2006, the closing stock was 600 units. The selling price is Rs 25 per unit. The actual output produced and fixed costs incurred during November 2006 were same as budgeted. There is no change in the rate of variable costs.

The profit for November 2006 as per absorption costing method is:

- A Rs 3,200 lower than under marginal costing method.
- B Rs 1,600 higher than under marginal costing method.
- C Equal to the profit under marginal costing method.
- D Rs 4,800 higher than under marginal costing method.

Answer to Q.1 :

(a) The gradient of the materials line is given by the relationship between coefficients for X and Y, ie 5 and 4.

The contributions of X and Y must be in the ratio of 5 : 4. The contribution of X is Rs 400 (Rs 1,000 - Rs 600); so the contribution of Y has to be Rs 320 (Rs 400/5 x 4). Therefore, the selling price of Y is Rs 920.

Answer is C.

(b) Total float of an activity = LOT2 - (EOT1 + d1-2)
so, 20 = 46 - (EOT1 + 17)
or, EOT1 = 9 days.

Free float = EOT2 - (EOT1 + d1-2)
= 27 - (9 + 17)
= 1 day.

Answer is B.

(c) Budgeted total units = 200 + 300 + 500 = 1,000;
Expected market size = 5,000 units
Budgeted market share = 1,000/5,000 x 100 = 20%
Actual market size = 5,300 units
Sales quantity should be 5,300 x 20/100 = 1,060 units.

BQ	RSQ	AQ in Std ratio	AQ	SP	SQ x SP	RSQ x SP	AQ in SR x SP	AQ x SP
units	units	units	units	Rs	Rs	Rs	Rs	Rs
X	200	212	196	50	10,000	10,600	9,800	10,500
Y	300	318	294	25	7,500	7,950	7,350	8,250
Z	500	530	490	18	9,000	9,540	8,820	7,920
	1,000	1,060	980		26,500	28,090	25,970	26,670

Market share variance : Rs (28,090 - 25,970) = Rs 2,120 A

Sales mix variance : Rs (25,970 - 26,670) = Rs 700 F

Answer is C

(d) Using the learning curve formula : $y = ax^b$

we get the average time for the cumulative 200 units : $y = 30 \times 200^{-0.2345} = 8.66$ hrs.
and the average time for the cumulative 199 units $y = 30 \times 199^{-0.2345} = 8.67$ hours.
Total time for 200 units = 200×8.66 hrs = 1,732.00 hrs and
for 199 units = 199×8.67 hrs = 1,725.33 hrs
Difference for the 200th unit = 6.67 hrs

Answer is D

(e) Profit under Absorption Costing Method:

	Rs	Rs
Sales	4,600 × Rs 25	1,15,000
Production costs: Variable	4,800 × Rs 14	67,200
Fixed	4,800 × Rs 8 *	<u>38,400</u>
		* [based on normal output, Rs 40000/5,000]
	1,05,600	
Opening stock of finished goods	8,800	[Rs (14 + 8) × 400 units]
(Less) Closing stock of finished goods	<u>(13,200)</u>	[Rs 1,05,600 / 4,800 × 600 units]
Cost of goods sold	<u>1,01,200</u>	
Profit	13,800	
(Less) under-absorption of fixed cost	<u>1,600</u>	[Rs 8 (4,800 – 5,000) units]
Net Profit	Rs <u>12,200</u>	

Profit under Marginal Costing Method:

Sales	1,15,000	
Production costs : Variable	67,200	
Opening stock of finished goods	5,600	[Rs 14 x 400 units]
(Less) Closing stock of finished goods	<u>(8,400)</u>	[Rs 67,200/4,800 x 600]
Cost of goods sold	<u>64,400</u>	
Contribution	50,600	
(Less) fixed cost incurred in the month	<u>(40,000)</u>	
Profit	Rs <u>10,600</u>	

Difference in computed profits between the two methods of costing: Profit under absorption costing method is
Rs 1,600 [12,200 – 10,600] higher than that under marginal costing method.

Answer is B.

Question :

2 (a) Explain backflush accounting and the circumstances in which its use will be appropriate. 4

- (b) A company which manufactures electric motors uses just-in-time manufacturing system which is supported by a backflush accounting system. The backflush accounting has two trigger points for the creation of journal entries. The two trigger points are
(i) Purchase of raw materials and (ii) Manufacture of finished goods.

The standard cost sheet of the product is as under:

	Rs
Raw material	26.00
Direct labour	8.20
Overheads	13.80

The transactions for the month of October 2006, are as under:

Sales for the month	3,09,000 motors
Finished goods completed	3,15,000 motors

Conversion costs incurred:	Rs
Direct labour	26,02,500
Overheads	47,22,000
Purchase of raw materials	83,62,500

There were no opening stocks of raw materials, work-in-progress or finished goods as on 1st October 2006. You are required to pass journal entries and prepare ledger accounts to record the above transactions for October 2006. 12

Answer to Q.2 :

- (a) Backflush accounting system focuses on the output of an organization and then works back to attribute costs to finished stock and cost of sales. It is unlike traditional costing system wherein movement of raw materials and components are recorded as they move from Raw Store to the stage of delivery of finished goods; traditional accounting is thus a 'sequential tracking system.' In backflush costing system, accounting starts at the finished goods stage, or in some organizations – after the sale of goods, when standard costs are used to work backwards to flush out the manufacturing costs.

In JIT system there is virtually no stockholding as well as no rework, so no accounts are required for these. Backflush costing eliminates need for a separate work-in-process account. Backflush costing is specially attractive in organizations that have low inventories resulting from JIT. Backflush accounting removes the incentive for managers to produce for inventory. On the other hand, it increases their focus on plant-wide goal rather than on individual sub-unit goals. Where inventories are low or are not subject to significant change from one accounting period to the next, the result of backflush costing will not differ materially from results of the system that adhere to generally accepted accounting principles as required for reporting financial statements.

(b) Journal Entries:

Raw Materials Inventory Account	Dr	Rs	Rs
To Trade Creditors Account		83,62,500	
(For purchase of materials)			83,62,500
Conversion Cost Account	Dr	73,24,500	
To Bank Account			26,02,500
Expense Creditors Account			47,22,000
(For payment to Direct Labour and Overheads incurred in the month)			
Finished Goods Inventory account	Dr	1,51,20,000	
To Raw Materials Inventory Account			81,90,000
Conversion Cost Account –			
Direct Labour Rs 25,83,000			
Overheads 43,47,000			
(For applying standard manufacturing costs, material, labour and overhead, to goods produced)			69,30,000
Cost of Sales Account	Dr	1,48,32,000	
To Finished Goods Inventory Account			1,48,32,000
(For sales for the month)			

Ledger Accounts:

Raw Materials Inventory Account			
	Rs		Rs
To Trade Creditors A/c	83,62,500	By Finished Goods Inventory A/c	81,90,000
		Balance c/f	1,72,500
	<u>83,62,500</u>		<u>83,62,500</u>
Conversion Cost Account			
	Rs		Rs
To Bank A/c	26,02,500	By Finished Goods Inventory A/c	69,30,000
Expense Creditors A/c	47,22,000	Costing Profit & Loss A/c	3,94,500
	<u>73,24,500</u>		<u>73,24,500</u>
Finished Goods Inventory Account			
	Rs		Rs
Raw Materials Inventory A/c	81,90,000	By Cost of Sales A/c	1,48,32,000
Conversion Cost A/c	69,30,000	Balance c/f	2,88,000
	<u>1,51,20,000</u>		<u>1,51,20,000</u>

Cost of Sales Account

Finished Goods Inventory A/c 1,48,32,000 By Costing Profit & Loss A/c 1,48,32,000

Question :

3. A company manufactures two products A and B. The demand for the products is large enough that the entire quantity produced each month can be sold. The cost sheet of the two products are as under:

	Products	
	A	B
	Rs	Rs
Selling price per unit	1,000	900
Raw material cost per unit	300	400
Conversion cost per unit	500	350

The extracts from Balance Sheet as at 30th November 2006 are as under:

	Current liabilities	Current assets
	Rs	Rs
Cash	-	1,00,000
Debtors	-	30,000
Inventory of raw materials	-	70,000
Bank borrowings (short term)	1,00,000	-

The raw materials inventory consists of 100 kg of materials suitable for product A and 100 kg of materials suitable for product B. These materials are not inter-changeable between the products A and B.

The relevant information are as under:

- All sales are on credit and payment for the goods sold in December 2006 will not be received until 31st January 2007.
- In December 2006, the company will collect Rs 20,000 from debtors outstanding as on 1st December 2006.
- In December 2006 the company has to pay Rs 10,000 of the outstanding short-term bank borrowings and also the monthly rent of Rs 10,000.
- On 31st December 2006 the company will receive a shipment of raw materials worth Rs 20,000 which will be paid on 31st January 2007.
- The cash balance as on 31st December 2006 should be at least Rs 40,000.
- The current ratio as on 31st December 2006 should be at least 2.
- Conversion costs are paid in the month in which they are incurred.

You are required to formulate the linear programming problem using the above information.

Note: No solution to the problem is needed.

Answer to Q.3.

Contributions from products A and B:

	A	B
	Rs	Rs
Selling price	1,000	900
Raw materials	(300)	(400)
Conversion costs	(500)	(350)
Contribution	<u>200</u>	<u>150</u>

Let a and b represent products A and B respectively.

Formulate the equation for the objective function:

Maximise $200a + 150b$

Formulate the equations for each constraint:

Inventory constraint $a \leq 100$; $b \leq 100$

Cash balance should be at least Rs 40,000.

[Cash balance = Opening balance Rs 1,00,000
+ Collection from debtors Rs 20,000
- Bank borrowing (short term) to be repaid Rs 10,000
- Monthly rent payable Rs 10,000
- Conversion cost Rs $(500a + 350b)$
= $1,00,000 - 500a - 350b$
 $\therefore 1,00,000 - 500a - 350b \geq 40,000$
or, $500a + 350b \leq 60,000$.

Current ratio should be at least 2

[Cash balance : $1,00,000 - 500a - 350b$ (i)

Debtors : Opening balance + sales - collections
 $30,000 + 1,000a + 900b - 20,000$
= $10,000 + 1,000a + 900b$ (ii)

Inventory: Opening balance + Receipts - Consumptions
 $70,000 + 20,000 - 300a - 400b$
= $90,000 - 300a - 400b$ (iii)

Total of Current assets = i + ii + iii = $2,00,000 + 200a + 150b$

Current liabilities = Bank borrowings – Loan repayment + Trade creditors
= $1,00,000 - 10,000 + 20,000 = 1,10,000$

Current Ratio : $2,00,000 + 200a + 150b / 1,10,000 \geq 2$
or, $200a + 150b \geq 20,000$

So, the formulated problem is: Maximise $z = 200a + 150b$
Subject to
 $a \leq 100$
 $b \leq 100$

$$\begin{aligned} 500a + 350b &\leq 60,000 \\ 200a + 150b &\geq 20,000 \\ a, b &\geq 0 \end{aligned}$$

Question :

4. A company manufactures Automated Toy cars for children above 12 years. The daily output of the Toy cars is currently around 200 nos. However, depending upon availability of various inputs the production level varies from low of 196 nos. per day to high of 294 nos. per day. The probability distribution of such production is as under:

Production per day	Probability
196	0.05
197	0.09
198	0.12
199	0.14
200	0.20
201	0.15
202	0.11
203	0.08
204	0.06

Because of handling and transportation problems only 200 Toy cars could be dispatched out of the factory every day. 8

Simulate the situation to find out

- (a) What will be the average number of Toys waiting in factory, and 4
(b) What will be the average number of shortfall in optimal dispatch per day. 4

The following random numbers may be used:

83, 90, 79, 25, 54, 62, 17, 46, 03, 23, 50, 77, 27, 54, 10.

Answer to Q.4 :

The random numbers are established in the following Table:

Production per day	Probability	Cumulative probability	Random No Interval
196	0.05	0.05	00 – 04
197	0.09	0.14	05 – 13
198	0.12	0.26	14 – 25
199	0.14	0.40	26 – 39
200	0.20	0.60	40 – 59
201	0.15	0.75	60 – 74
202	0.11	0.86	75 – 85
203	0.08	0.94	86 – 93
204	0.06	1.00	94 – 99

Simulation Table using Random Number:

	Random No.	Est. production per day	No. of toys waiting			Total Waiting	Shortfall Dispatch
			Op. bal.	Excess	Shortfall		
1	83	202	–	2	–	2	–
2	90	203	2	3	–	5	–
3	79	202	5	2	–	7	–
4	25	198	7	–	2	5	–
5	54	200	5	–	–	5	–
6	62	201	5	1	–	6	–
7	17	198	6	–	2	4	–
8	46	200	4	–	–	4	–
9	03	196	4	–	4	0	–
10	23	198	0	–	2	0	2
11	50	200	0	–	–	–	–
12	77	202	0	2	–	2	–
13	27	199	2	–	1	1	–
14	54	200	1	–	–	1	–
15	10	197	1	–	3	–	2
						<u>42</u>	<u>4</u>

- (a) Average number of Toy car waiting = $42/15 = 2.8$
(b) Average number of shortfall in optimum dispatch per day = $4/15 = 0.266$

Question :

- (a) What is loss leader pricing ? 4
(b) A company is currently producing a product called product A and the unit cost of manufacturing is Rs 60. Some improvement is proposed which will increase the unit cost of manufacture of the improved product called product B to Rs 67. Additionally the sale and administration cost will be Rs 20 per unit for both products.

The sale price of product A and product B are as under:

	Price per unit (Rs)	
	Wholesale	Retail
Product A	90	180
Product B	99	198

The improvement in product A will increase the total market of this type of product by 5% from the current market size which is for 50 lakh pcs. The current market share of product A is 40%, which would remain as such, if the manufacture continues to sell product A. However, it has been feared that with increased selling price of the proposed product B, 30% of the existing customer of product A will switch over to other products marketed by competitions at a cheaper price although such products will not have the improved features. Both product A and product B would require to be updated after every year in a rapidly changing market. You are required to give your opinion with relevant calculations as regards which product the company should produce.

Answer to Q.5 :

- (a) When a product is clubbed with a series of optional extras with option to the customer to select and add on the extras to the main product, the manufacturer can set a relatively low price for the main product and compensate the loss in revenue due to such low price by setting high prices for the extras. This is known as loss leader pricing. An example:

When Maruti small cars were introduced, prices thereof were kept low, but replacement parts like the covers of the front and back lights were exorbitantly high.

- (b) (i) Position when product A is continued to be produced:

Market share of company = 40% of 50,00,000 = 20,00,000 units
Margin per unit = Rs 90 – Rs 60 = Rs 30
Less Selling and administration cost = Rs 20
Net margin = Rs 10
Total margin = Rs 10 x 20,00,000 = Rs 2,00,00,000

- (ii) Position when product B is produced:

With 5% increase in demand for improved version of product A by new customers,
Demand = 45% of 50,00,000 = 22,50,000

Less switching of old customers
because of increased price = 30% of 20,00,000 = 6,00,000
Total demand for product B = 16,50,000 units

Margin per unit = Rs 99 – Rs 67 = Rs 32
Total gross margin = 16,50,000 x Rs 32 = Rs 5,28,00,000
Less Selling & administration cost = Rs 20 x 16,50,000 = Rs 3,30,00,000
Total net margin = Rs 1,98,00,000

As per the above working the expected gain from product B (the improved product A) is less than the gain from the existing product A. In view of it, the company should continue with product A as is.

Question :

- 6 (a) Explain with example as to how to compute ordering policy where conditions of price-break are applicable. 4
(b) A manufacturer uses a component at the rate of 2,500 units/year. The basic cost of the component is Re. 1/- each and the marginal cost of carrying inventory is 20% of the cost of the item. The supply cost of the components have to be collected from the supplier involving an overall transport cost of Rs 40/- per trip.

- (i) Assuming that the actual consumption of the components during the year was 3,000, to what extent will the manufacturer lose by working out his order quantity for a demand of 2,500 ?
- (ii) If the actual transportation cost incurred per order is Rs 30/-, determine the cost of error.

Answer to Q.6 :

6 (a) It is a common practice in business that where the quantity ordered to a supplier is large, a discount is asked for or is offered. Thus the price of the item will not be the same for all quantities of order; the price will differ depending on the quantity ordered. The optimal ordering policy in such a situation will be that which will minimize the overall cost including the cost of material consumed (i.e., ordering cost + holding cost + consumption cost).

(b) EOQ when there is no price discount = $\sqrt{[(2 \times 2,500 \times 40)/(1 \times 0.2)]} = 1,000$ units.

Variable cost (excluding acquisition cost) = $(2,500/1,000) \times 40 + (1,000/2) \times 1 \times 0.2$
= Rs 200

(i) The relevant cost when the demand is 3,000 units
= $(3,000/1,000) \times 40 + (1,000/2) \times 1 \times 0.2 = \text{Rs } 220$

If the estimates were correct, EOQ = $\sqrt{[(2 \times 3,000 \times 40)/(1 \times 0.2)]} = 1,095$ units, and
The relevant cost = $(3,000/1,095) \times 40 + (1,095/2) \times 1 \times 0.2 = \text{Rs } 219.09$
So, the cost of error = Rs 220 – Rs 219.09 = Rs 0.91

(ii) Variable cost = $(2,500/1,000) \times 30 + (1,000/2) \times 1 \times 0.2 = \text{Rs } 175$
EOQ = $\sqrt{[(2 \times 2,500 \times 30)/(1 \times 0.2)]} = 866$ units, and
The relevant cost = $(2,500/866) \times 30 + (866/2) \times 1 \times 0.2 = \text{Rs } 173.20$
So, the cost of error = Rs 175 – Rs 173.20 = Rs 1.80

Question :

7. Metflow Division is a part of the AKG Group. Metflow Division produces a single product for which it has an external market which utilizes 80% of its production capacity.

Akali Division which is also a part of the AKG Group, requires units of the product available from Metflow as input to a product which will be sold outside the Group. Akali Division's requirements are equal to 40% of Metflow Division's production capacity.

Akali Division has a potential source of supply from outside the AKG Group. This outside supplier can supply 75% of Akali Division's requirements. The outside source may wish to quote a higher price if Akali Division only intends to take up part of its product availability.

Required:

Discuss aspects of transfer pricing principles and information availability which will affect the likely achievement of group profit maximization from the sourcing decision made by Akali Division in the above situation.

Answer to Q.7 :

The Metflow Division – Akali Division situation may be studied from a number of viewpoints:

- (i) Where Metflow Division has an external market for its product (80% of its capacity), the transfer price (tp) should be set at market price in order to comply with the general rule.
tp = marginal cost + opportunity cost to the supplying division.
In this way any external supply available to Akali Division at less than the market price of Metflow Division's product will increase group profit.
- (ii) Inter-divisional transfers may be effected with less packing costs and less delivery costs (say, using group vehicles). In this case the opportunity foregone by the group must be adjusted by the external costs that have been avoided. In this way Metflow Division will earn the same profit as from external sales and Akali Division will reject supplier quotes which are in excess of the adjusted market price quoted by Metflow Division.
- (iii) For the 20% spare capacity, it appears Metflow Division has no external market. So, the opportunity cost is zero. Metflow Division can offer the product to Akali Division at marginal cost. Outside supplier quotes in excess of the marginal cost of Metflow Division must be rejected in this case.
- (iv) The question states that the external supplier can supply 75% of Akali Division's requirement. This is equivalent to 30% of the capacity of Metflow. Since Metflow Division's spare capacity is only 20%, the balance 10% must be outsourced by Akali Division. The price of this balance quantity should not exceed the market price of Metflow Division's external sales.

It will be useful for Metflow Division to indicate the quantities which it is willing to supply at different prices, viz. 20% capacity at marginal cost and 10% capacity at adjusted market price. In this way Akali Division can evaluate this offer from the external source taking into account the probability that external source may require a higher price for a part order.

Question :

8. Better budgeting in recent years may have been seen as a movement from 'incremental budgeting' to 'alternative budgeting approaches'.

Explain in what ways management accountant can adopt the services they provide to the new environment. Your answer should refer to the modern models of:

- (a) benchmarking;
- (b) balanced scorecard; and
- (c) activity based methods.

Answer to Q.8 :

The traditional management accounting techniques for performance measurement and control are based around budgetary control and standard costing and the associated variances.

Businesses have become more competitive at present. Customers look for more varieties with differentiation in similar products. Products have shorter life cycle. As a result, traditional budgetary control has become less useful.

Incremental budgeting takes care of variation in levels of output. It provides a better measure of performance evaluation. However, if management accountants are to produce meaningful and more effective performance reports in the future, they should be concerned not only with comparing results against budgets but also against alternative methods of working. For example, they should be comparing the costs of traditional stock-holding policies against new techniques such as 'just-in-time'. They should also be concerned with non-financial measures of performance, particularly those associated with quality, such as statistical control charts and reject rates.

For better services to the management some of the modern tools at the hands of management accountants include benchmarking, balanced scorecard, and activity-based models. Briefly stating, they are used as under:

Benchmarking: It helps in setting better goals to be achieved based, as it is, on

'best-practice' external organizations or cross-functional 'best-practice' divisions. However, benchmarking may be viewed as an attempt by top management to impose impossible targets upon operational managers. Success herein lies with organizational culture. The operational managers must be taught that long-term benefits are available if they care for long-term targets of the company as against achieving the short-term targets which they have been used to under traditional budgeting process.

Balanced scorecard: It includes both financial and non-financial measures of performance. A well-constructed scorecard contains a mix of long-term and short-term measures and therefore drives the company in the direction of medium-term strategic goals which are supported by cross-functional initiatives. However, where a continued emphasis exists on meeting short-term (eg Quarterly) targets, budgets can also act as an impediment to the acceptance of responsibility by local managers for the achievement of the scorecard targets.

Activity-based models: Traditional budgets show the costs of functions and departments instead of costs of those activities like receiving goods inwards, processing and dispatching of orders, etc. that are performed by people. Thus, managers have no visibility of the real 'cost drivers' of their business.

In addition, traditional cost systems report less accurate costs because they use cost drivers where no cause-and-effect relationships exist to assign support costs like schedule production,

set-up machines, purchase and move materials, inspect items , process supplier records, expedite and process customer orders.

It is also possible that a traditional budget contains a significant amount of non-value-added costs that are not visible to the managers. Reporting costs of non-value-added activities would offer an opportunity for cost reduction by eliminating or redesigning inefficient activities like inspecting, storing and moving raw materials without reducing the product's utility or service potential to the customer.

Further, the annual budget tends to fix capacity for the forthcoming budget period thereby undermining the potential of Activity-based management (ABM) analysis to determine required capacity from a customer demand perspective. If these problems are removed, persons using ABM techniques would find their tasks much easier to perform and their results more reliable.

FINAL EXAMINATION - STAGE-IV (REVISED SYLLABUS)

SUGGESTED ANSWERS TO QUESTIONS DECEMBER-2006

PAPER 18 : MANAGEMENT ACCOUNTING — FINANCIAL STRATEGY AND REPORTING

Answer Question No1 which is Compulsory and any five from the rest.

Question: 1(a) in each of the cases given below, one out of four answers is correct. Indicate the correct answer and give your workings/reasons briefly :

1. (a) (i) KOREX LTD has an average cost of debt of 10 per cent and a tax rate of 40 per cent. The financial leverage ratio for the company is 0.60. What is the ROE for KOREX LTD if its R.O.I is 20 per cent?

- A. 10.40%
- B. 12.80%
- C. 15.60%
- D. 16.50%

(ii) Mr. Garg is bearish about Cipla which trades in the Spot market at Rs. 1240. He decides to buy one three month put option contract on Cipla with a strike price of Rs. 1235 at Rs.35.00 a put. Three month later Cipla is selling at Rs.1280. His profit/loss on the position is

- A. Rs.3000
- B. (Rs.3500)
- C. Rs.3500
- D. (Rs.8000)

(iii) The Cum-rights price per share of BIN LTD is Rs.48 and the theoretical value of the right is Rs.4. The subscription price at which the rights are issued is Rs.36 per share. The number of existing shares required for a right share is

- A. 5
- B. 4
- C. 3
- D. 2

(iv) BBA LTD has its net operating income of Rs.800000 utilising capital base of Rs.4000000. If the average cost of capital is 11 per cent and corporate tax is 30 per cent, then EVA-turns up to

- A. Rs.120000
- B. Rs.160000
- C. Rs.200000
- D. Rs.220000

(v) The share of MKC LTD is selling at Rs.100. A 2 month put is selling at Rs.8. The put's exercise price is Rs.101 and the risk free rate is 9 per cent P.A. What would be the price of a 2 month call? [Given PVIF (9%, 1/6 yr) = 0.9852]

- A. Rs.6.00
- B. Rs.8.49
- C. Rs.11.48
- D. Rs.13.24

(vi) If the dividend yield for SANDAL LTD is 0.4, whose P/E multiple and EPS are 4 and Rs.10 respectively, the dividend per share of the company is

- A. 18.50
- B. 16.00
- C. 13.60
- D. 12.00

2×6 = 12

(b) From the following, choose the most appropriate answer (only indicate A,B,C,D as you think correct) :

(i) As per AS-10, Fixed assets that have been retired from active use and held for disposal should be stated in Balance Sheet at

- A. Net book value.
- B. Net realizable value.
- ☒ C. Lower of the net book value and net realizable value.
- D. Higher of the net book value and net realizable value.

(ii) Equity multiplier is defined in DU point Analysis as

- A. EPS/Market price of shares.
- B. EPS/Book value of shares.
- C. PAT/Net worth.
- ☒ D. Average assets/Average equity.

(iii) For measuring beta, which can be used as a proxy for the market portfolio?

- ☒ A. BSE 200 Index.
- B. Any market Index.
- C. BSE Sensex.
- D. None of (A), (B), (C).

(iv) Global Reporting Initiative is

- A. Global Reporting Software.
- ☒ B. An undertaking for sustainable development.
- C. World Bank Initiative.
- D. None of (A), (B), (C).

- (v) Which of the following is not considered while determining the appropriate P/E Ratio for a firm?
- A. Industry growth rate.
 - B. Stability of earnings.
 - C. Both (A) and (B).
 - ☒ D. Book value to earnings per share ratio.
- (vi) *Ceteris Paribus*, a security is to be bought if
- ☒ A. The required rate of return is less than the expected rate of return.
 - B. The required rate of return is greater than the expected rate of return.
 - C. Security has a beta greater than one.
 - D. Security has a beta less than one.
- (vii) If the return on a security lies below the security Market Line (SML), then
- A. The security is aggressive security.
 - B. The security is over priced.
 - ☒ C. The security is under priced.
 - D. The security's beta is less than one.
- (viii) Under the CPP method of Price Level Accounting, which of the following is not considered as Monetary Asset?
- A. Fixed Interest investments.
 - B. Debtors.
 - ☒ C. Inventory.
 - D. Both (B) and (C)

1×8 = 8

Answer to Q. 1(a):

- (i) $\longrightarrow$ C: 15.60% $ROE = [R_0 + (R_0 - r) D/E] (1-t)$
 $= [0.20 + (0.20 - 0.10) \cdot 0.60] (1 - 0.40)$
 $= 0.26 \cdot 0.60 = 0.156$ i.e. 15.60%
- (ii) $\longrightarrow$ B: (Rs.3500) LOSS:
 Mr. Garg's Loss = $[(Rs.1235, E-1280 St) - Rs.35] \times 100$
 $= (0 - 35) \cdot 100 = (Rs.3500) \text{ Loss.}$
- (iii) $\longrightarrow$ D: 2. The theoretical value of a right:
 $= \frac{P_0 - S}{N+1}$ where P_0 = the Cum-rights price
 S = subscription price at which rights are issued
 N = Number of existing shares required for a rights share.

Hence,

$$4 = \frac{48 - 36}{N+1} \quad \text{or, } 4N + 4 = 12$$

$$\text{or, } N = 8 \div 4 = 2$$

- (i) A: Rs.120000:

$$NOPAT = Rs. 800000 - (0.30 \times 800000) = Rs. 560000$$

$$EVA = Rs. 560000 - 11\% \text{ of Rs. } 4000000$$

$$= Rs. 560000 - Rs. 440000 = Rs. 120000$$

- (ii) B: Rs.8.49. From put call parity theorem, We know

$$\text{that, } C - P = S - PV(K)$$

$$\text{Where, } C = \text{Price of 2 month Call} = ?$$

$$\text{Hence, we get, } C = 8 + 100 - (101 \times 0.9852)$$

$$= 108 - 99.51 = Rs. 8.49.$$

- (iii) B: Rs.16.00

$$\text{Dividend yield (0.4) = Dividend per Share/Market price}$$

$$EPS = 10, P/E = 4$$

$$MPS = EPS \times P/E = 10 \times 4 = Rs. 40$$

$$\therefore DPS = 0.4 \times 40 = Rs. 16.$$

Answer to Q.1 (b):

$$(i) \longrightarrow C. \quad (ii) \longrightarrow D. \quad (iii) \longrightarrow A. \quad (iv) \longrightarrow B.$$

$$(v) \longrightarrow D. \quad (vi) \longrightarrow A. \quad (vii) \longrightarrow B. \quad (viii) \longrightarrow C.$$

Question:

- 2.(a) Explain how the five input variables can be adapted to value 'Real' options as opposed to traded share options.

(b) The stock of EXOTICA LTD (EL) is currently trading at Rs.408 and call option exercisable in three months times has an exercise rate of Rs.400. The standard deviation of the continuously compounded stock price change for Exotica Ltd. is estimated to be 22% per year. The annualized Treasury Bill rate corresponding to this option life is 5%. The company is going to declare a dividend of Rs.10 and it is expected to be paid in two months time.

Requirement:
What is the value of a three month call option on the stock of EXOTICA LTD. (based on Black and Scholes Model).

Note:
Extracted from the Tables

1. Natural Logarithms:
 $L_n(0.99521) = -0.00480$, $L_n(1.020) = 0.01980$, $L_n(0.98039) = -0.019804$

2. Value of e^x : $e^{-0.01} = 0.99010$, $e^{-0.0125} = 0.98758$

3. When $x \times e^0$: $N(0.125) = 0.5498$, $N(0.015) = 0.5060$
When $x \times d^0$: $N(-0.125) = 0.4502$, $N(-0.015) = 0.4940$

4. PVIF (5%, 1/4 year) = 0.9877 , PVIF (5%, 1/6 year) = 0.9917

5+11 = 16

Answer to Q. 2(a):

As applied to Capital investments, the variables could relate as follows:

Share price: Present value of expected cash flows,

Exercise price: Initial outlays on the investment.

Risk-free Interest rate: Risk-free interest rate.

Time to expiry: Time until the investment opportunity disappears (not the time to the end of the investment).

Share price Volatility: Project value uncertainty.

Answer to Q. 2(b) : EXOTICA LTD.

- (i) Since dividend is expected to be paid in two months time, we have to adjust the stock price and then use Block and Scholes model to value the option.
P.V of the expected dividend: $10 \times 0.9917 = \text{Rs. } 9.917$
Dividend Adjusted stock price: $\text{Rs. } 408 - 9.917$
 $= \text{Rs. } 398.083$

This can be used in Block – Scholes model:

Value of the Call Option:

$$V_o = V_s N(d_1) - E e^{-rt} N(d_2)$$

Where , V_s = Current price of stock (adjusted)
 E = Exercise price, r = Risk free rate.

$$d_1 = \frac{\ln(V_s/E) + (r + 1/2 \alpha^2)t}{\alpha \sqrt{t}}$$

$$d_2 = d_1 - \alpha \sqrt{t}$$

Where , $t = 3/12 = 0.25$
 $r = 0.05$, $\alpha = 0.22$

$$d_1 = \frac{\ln(398.083/400) + [0.05 + 1/2 (0.22)^2] \times 0.25}{0.22 \sqrt{0.25}}$$

$$= \frac{\ln(0.99521) + 0.0742 \times 0.25}{0.11} = \frac{-0.00480 + 0.01855}{0.11}$$
$$= \frac{0.01375}{0.11} = 0.125$$

$d_2 = 0.125 - 0.22 \sqrt{0.25} = 0.0125 - 0.11 = 0.015$
 $N(d_1) = N(0.125) = 0.5498$, $N(d_2) = N(0.015) = 0.5060$

Value of call option (V_o) : $V_s N(d_1) - E e^{-rt} N(d_2)$
[where $V_s = 398.083$, $E = 400$
 $e^{-rt} = e^{-0.05 \times 0.25} = e^{-0.0125}$
 $= 0.98758$]

$V_o = 398.083 \times 0.5498 - 400 \times 0.98758 \times 0.5060$
 $= 218.866 - 199.886 = \text{Rs. } 18.98$

Hence, the value of a three month call option on the stock of EXOTICA LTD is Rs.18.98

Question:

3 (a) INDUGA LTD has at its financial year ended 31st March, twenty law suits outstanding, none of which has been settled by the time the accounts are approved by the Directors. The Directors have estimated that the possible outcomes as below:

Result	Probability	Amount of loss Rs.
For first 14 cases		-
Win	0.6	
- Lose-low damages	0.3	120000
Lose-high damages	0.1	180000
For remaining 6 cases Win	0.5	-
Lose-low damages	0.3	90000
Lose-high damages	0.2	120000

The directors believe that the outcome of each case is independent of the outcome of all others. Estimate the amount contingent loss and state the accounting treatment of such contingent loss keeping in view the relevant Accounting Standard (AS).
(b) NDA LTD has three divisions P, Q, and R. Details of their turnover, results and Net assets are given below:

Division P		(Rs. in thousand)
Sales to Q		Rs.
Other sales(home)		3000
Export Sales		80
		4100
Division Q		7180
Sales to R		
Export Sales to U.K.		40
		210
Division R		250
Export Sales to U.S.A.		
		180

	Head Office	Divisions		
		P	Q	R
Operating Profit or Loss before tax	-	180	30	(10)
Re-allocated Cost from Head Office		50	25	25
Interest Costs		5	6	1
Fixed Costs	60	210	50	130
Net Current Assets	50	110	45	85
Long-term liabilities	40	20	12	125

Prepare a Segment Report for Publication in NDA LTD. in accordance with AS-17. 8+8 =16

Answer to Q.3 (a):

INDUGA LTD.

As per AS – 29 (Ref Para 29.10) contingent liability should be disclosed in financial statements. The following conditions should be fulfilled for disclosure of contingent liability.

- (i) There should be present obligation arising out of past event but not recognized as provision.
- (ii) It is ~~not~~ probable that an outflow of resources embodying economic benefits will be required to settle the obligation.
- (iii) The possibility of an outflow of resources embodying economic benefits is not remote.

- (iv) The amount of the obligation can ~~not~~ be measured with sufficient reliability to be recognized as provision.

In this case, the probability of winning of first 14 cases is 60% and for remaining 6 cases is 50%. In other words, the probability of losing is 40% and 50% respectively. As per the AS-29, we make a provision if the loss is probable. As the loss does not appear to be probable and the possibility of an outflow of resources embodying economic benefits is not remote rather there is reasonable possibility of loss.

Therefore disclosure of contingent liability by way of note should be made. For the purpose of the disclosure of contingent liability by way of note amount may be calculated as follows:

1) Expected loss in first 14 cases :
= (Rs.120000 × 0.3 + 180000 × 0.1) × 14
= Rs. 756000

2) Expected loss in remaining 6 cases :
(Rs. 90000 × 0.3 + 120000 × 0.2) × 6
= Rs. 306000

Total contingent liability (1+2) : Rs.1062000

Answer to Q-3(b) :

NDA LTD.

	SEGMENT REPORT			(Rs. in thousand)	
	Divisions			Inter-Segment Eliminations	Consolidated Total
	P	Q	R		
Segment Revenue:					
Sale					
Domestic	80	—	—	—	80
Export	4100	210	180	—	4490
External Sales	4180	210	180	—	4570
Inter-Segment Sales 2	3000	40	—	3040	—
Total Revenue 1+2	7180	250	180	3040	4570
Segment Result given	180	30	(10)	—	200
Head office Expenses	—	—	—	—	(100)
Operating profit	—	—	—	—	100
Interest Expenses	—	—	—	—	(12)
Profit before tax	—	—	—	—	88

Other Information	–	–	–	–	–
Fixed Assets	210	50	130	–	390
Net current Assets	110	45	85	–	240
Segment Assets	320	95	215	–	630
Unallocated corporate Assets	–	–	–	–	110
Segment liabilities	20	12	125	–	157
Unallocated Corporate liabilities	–	–	–	–	40

SALES REVENUE BY GEOGRAPHICAL MARKET

(Rs. in thousand)				
Home Sales	Export sales by divisions - P	Export to UK	Export to USA	Consolidated Total
80	4100	210	180	4570

- Question:
4. (a) (i) What is deprival value ?
- (ii) How would you compute deprival value in the following cases?

	I(Rs.)	II(Rs.)	III(Rs.)
Historical Cost (depreciated)	24000	30000	36000
Replacement Cost of identical assets	30000	26400	48000
Net present value (value in use)	36000	25200	60000
Net realizable value	33600	24000	54000

(b) The following information pertains to OPTIMA LIMITED:

Cost of machine	500000
Estimated life	4 years
Residual value	Nil
Inflation factor	10% p.a.
Depreciation	Straight line method

From the given information you are required to calculate the amount of depreciation under current cost accounting method for each of the four years as well as the Backlog Depreciation for a certain item of the asset.

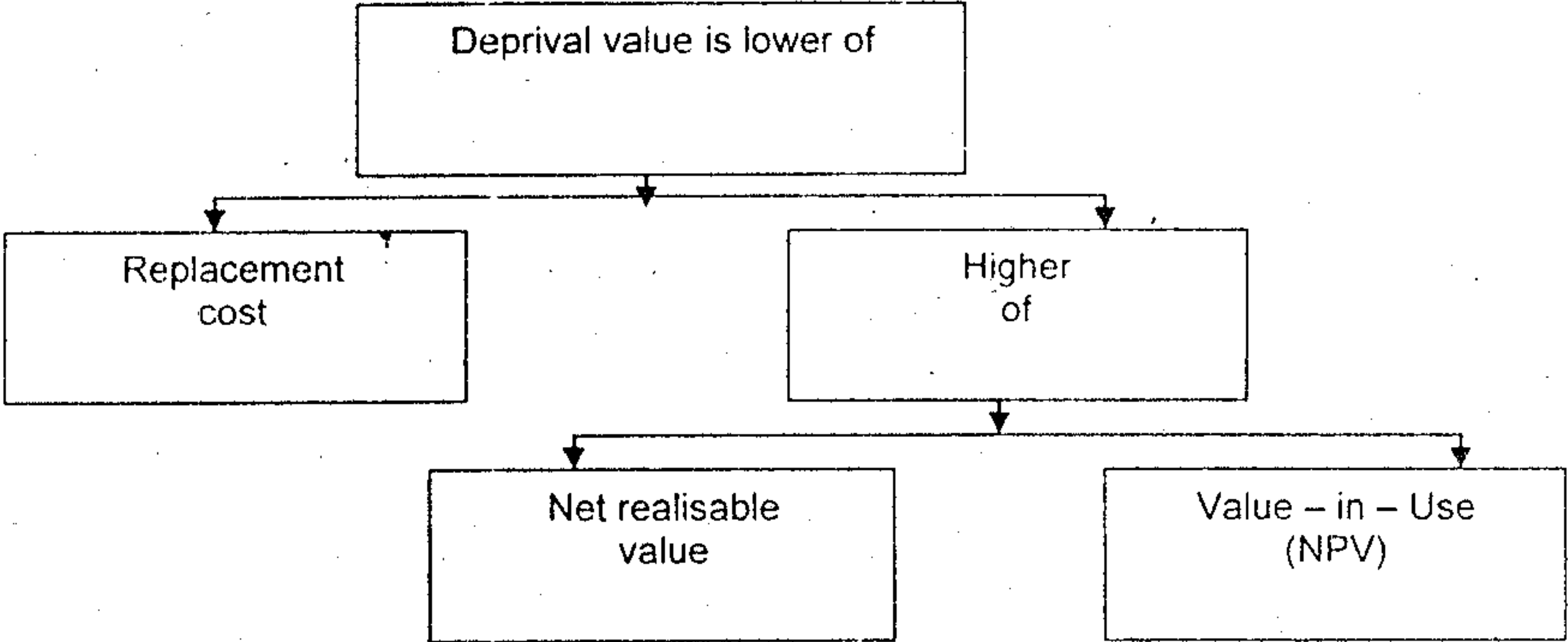
(2+6)+8 =16

Answer to Q 4(a)

(i) Deprival Value :

Deprival Value is the loss that owner of any asset suffers if he is deprived from the asset. The concept of deprival value has been derived from the value of the owner concept being developed by an American Economist, J.C.Bombright.

The computation of deprival value is based on the frame work as follows :



(ii) CASE-I :

Deprival value would be Rs.30000 is Replacement cost. The deprival value of an asset cannot exceed replacement cost as the replacement enables the owner to capture the asset's Recoverable amount in the higher of net Realisable value and value-in-use.

CASE-II :

Replacement of the assets is not economically justified, as the recoverable amount from the asset (value-in-use) is less than the Replacement Cost. Hence the deprival value in this case should be Rs.25200 being the maximum amount that can be recovered from the asset.

CASE-III :

Deprival value in this CASE is Rs. 48000 as the Replacement cost does not exceed the recoverable amount.

Answer to Q.4(b) :

OPTIMA LTD.
CALCULATION OF DEPRECIATION UNDER CCA METHOD

Year	Historical cost (Rs.)	Replacement Cost (Rs.)	Depreciation on		Additional Depreciation (CCA Adjustment) Rs.
			Historical cost (Rs.)	Replacement cost (Rs.)	
1	500000	550000	125000	137500	12500
2	500000	605000	125000	151250	26250
3	500000	665500	125000	166375	41375
4	500000	732050	125000	183013	58013
			500000	638138	138138

CALCULATION FOR BACKLOG DEPRECIATION

Year	Total Historical cost (Rs.)	Depreciation on Replacement Cost (Rs.)	Total Depreciation (Rs.)	Additional annual Depreciation Rs.
1	125000	137500	12500	12500
2	250000	302500	52500	40000 (52500 - 12500)
3	375000	499125	124125	71625 (124125 - 52500)
4	500000	732050	232050	107925 (232050 - 124125)
			232050	

Year	Additional Depreciation Rs.	CCA Depreciation adjustment (Rs.)	BACKLOG DEPRECIATION (Rs.)
1	12500	12500	Nil
2	40000	26250	13750
3	71625	41375	30250
4	107925	58013	49912
	232050	138138	93912

Question:

- 5 (a) Discuss the steps involved in implementing EVA (Economic Value Added) System.
 (b) MAGNAVISON CORPORATION LTD. (MCL) is considering a new project involving an investment of Rs. 50 million for which the following information is available:

Project life	4 years	Depreciation	Straight line
Salvage value	Nil	(for tax purposes)	
Annual Revenues	Rs. 60 million	Debt-Equity Ratio	4:5

Annual Costs (excluding depreciation Interest and Taxes)	Rs. 40 million	Interest rate on Debt (Post Tax)	9%
		Tax Rate	40%
Risk free rate of return in the economy	6%	Market Risk Premium Beta of MCL's Equity	8% 1.5

You are required to:

- Compute the EVA of the project over its life.
- Calculate the NPV of the project using EVA approach.

Note:

Extracted from the table of PV of Re. 1

Present Value Interest Factor (PVIF):

	Year	0	1	2	3	4
At 14%	PV:	1	0.877	0.769	0.675	0.592
At 15%	PV:	1	0.870	0.756	0.658	0.572

6+10=16

Answer to Q.5(a) :

Implementing the EVA system involves several steps which are enumerated below :

Develop Top Management Commitment :

A crucial requirement of EVA system is top management commitment. To build this commitment, the top management should be thoroughly grounded in the theory and practice of EVA.

Customize the Definitions of EVA :

A cross functional team of executives should arrive at a customize definition of EVA- in terms of NOPAT, CAPITAL, and EVA calculation – that is best suited to the firm considering its informational needs and accounting system.

Identify EVA Centres :

A firm may be divided into EVA centres – these are responsibility centres for which individual EVA-s will be calculate on a continuing basis.

Anlyse the Drivers of EVA :

EVA must be linked to various financial and non-financial variables which drive it. An understanding of these drivers help managers to appreciate how their actions influence value.

Tailor an Incentive Compensation System :

The incentive compensation system must align the interest of managers with shareholders. Ideally ,it should make managers think, act and be compensated like owners.

Train All the Employees :

The employees at all levels of the organization must be trained in the basics of EVA. They must know how EVA is calculated, what EVA means, and how their actions impact on EVA.

Answer to Q 5(b) :

MAGNAVISON CORPORTAION LTD.

(i) COMPUTATION OF ECONOMIC VALUE ADDED

	(Rs. in Million)			
	YEARS			
	1	2	3	4
1. Revenues	60.00	60.00	60.00	60.00
2. Costs	40.00	40.00	40.00	40.00
3. PBDIT	20.00	20.00	20.00	20.00
4. Depreciation	12.50	12.50	12.50	12.50
5. PBIT	7.50	7.50	7.50	7.50
6. TAX (0.40)	3.00	3.00	3.00	3.00
7. NOPAT	4.50	4.50	4.50	4.50
8. CASH FLOW (4+7)	17.00	17.00	17.00	17.00
9. Capital at charge	50.00	37.50	25.00	12.50
10. Capital charge @ 14% on Sl. No. 9 <WN-2>	7.00	5.25	3.50	1.75
11. ECONOMIC VALUE ADDED (EVA) [7 – 10]	(2.50)	(0.75)	1.00	2.75

(ii) CALCULATION OF NPV OF THE PROJECT (USING EVA approach) -

$$NPV = \sum_{t=1}^n \frac{EVA_t}{(1+k)^t} = (2.5) \times 0.877 + (0.75) \times 0.769 + 1.00 \times 0.675 + 2.75 \times 0.592$$

$$= (\text{Rs. } 0.46625) \text{ Million} = (\text{Rs. } 0.466) \text{ Million [Rounded off]}$$

Working Notes:

1. Cost of Equity:
According to CAPM, Cost of equity is:
 $6\% + 1.5(8\%) = 6\% + 12\% = 18\%$
2. Weighted average cost of capital (WACC) :
 $4/9 \times 0.09 + 5/9 \times 0.18 = 0.14 \text{ i.e. } 14\%$

Question:

6. GNL Limited has maintained the following relationships in recent years:

(i) Gross profit to net sales	40%
(ii) Net profit to net sales	10%
(iii) Selling expenses to net sales	20%
(iv) Book debts turnover	8 p.a.
(v) Inventory turnover	6 p.a.
(vi) Quick ratio	2
(vii) Current ratio	3
(viii) Assets turnover (sales basis)	2 p.a.
(ix) Total assets to intangible assts	20
(x) Accumulated depreciation to cost of fixed assets	1/3
(xi) Book debts to Sundry Creditors (for goods)	1.50
(xii) Shareholder's funds to Working Capital	1.60
(xiii) Total debts to Shareholder's funds	0.50

Quick assets comprise 15% cash, 25% marketable securities and 60% book debts. During 2005-06, the company earned Rs.1200000 or Rs.4.68 per equity share; the market value of one equity share was Rs.78. The capital consisted of equity shares issued at a premium of 10% and 12% preference shares of Rs.100 each. Interest was Rs.75000 in 2005-06; many years ago, the company had issued 10% debentures due for redemption in 2007. During 2005-06 there was no change in the level of Inventory, Book-debts, Debentures and Shareholders' funds. All purchases and sales were on account. Preference dividend paid in 2005-06, in full was Rs.30000.

You are required to prepare:

- (i) Balance Sheet as on March 31, 2006. and
 - (ii) Profit and Loss Account for the year ended March 31, 2006. Ignore Taxation.
- Show necessary workings.

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Answer to Q 6:

(i)

GNL LIMITED			
Balance Sheet as on March 31, 2006			
Liabilities	Rs.	Assets	Rs.
Share Capital:		Fixed Assets:	
Issued & Subscribed		Cost	2925000
250000 Equity shares of		Less: Depreciation	975000
Rs. 10 each fully paid	2500000		1950000
12% Preference shares of		Investments:	625000
Rs. 100 each fully paid	250000	(Marketable Securities)	
Reserves & Surplus:		Current Assets, Loans	
Share Premium	250000	and Advances:	
Profit & Loss account	1000000	Stock	1200000

Book debts	1500000
Cash	375000
Prepaid Expenses	<u>50000</u>
	3125000
Intangible Assets	300000

Secured Loans:

10% Debentures, due for redemption in 2007 750000

Current Liabilities & Provisions:

Sundry Creditors for goods	1000000
Outstanding Expenses	<u>250000</u>
	<u>6000000</u>

6000000

(ii) **PROFIT & LOSS ACCOUNT FOR THE YEAR ENDED MARCH 31, 2006**

	Rs.		
To Cost of Goods Sold	7200000	By Sales	12000000
To Selling Expenses	2400000		
To Administrative Expenses	1125000		
To Interest	75000		
To Net Profit	1200000		
	<u>12000000</u>		<u>12000000</u>

Working Notes :

- Sales will be Rs.12000000 since Net profit given as 1200000 is 10% of sales.
- Gross profit being 40% of sales, cost of goods sold will be 60% of sales or Rs.7200000.
- Selling expenses : 20% of Rs.12000000 is Rs.2400000
- Administration Expenses – is the balancing figure.
- Book debts : $1200000 / 8 = \text{Rs.}1500000$
- Inventory : $\text{Cost of sales} / 6 = 7200000 / 6 = \text{Rs.}1200000$
- Book debts : Cash : 60:15 , therefore CASH : $(1500000 \times 15) / 60 = \text{Rs.}375000$.
- Marketable Securities = $(1500000 \times 25) / 60 = \text{Rs.}625000$
- Total Quick assets = Book debts + Cash + Marketable Securities.
 $= (1500000 + 375000 + 625000)$
 $= \text{Rs.}2500000$.
- As quick Ratio being 2, Current liabilities will be $(2500000 / 2) = \text{Rs.}1250000$.
- Total Current Assets : $1250000 \times 3 = \text{Rs.}3750000$
- Total of quick assets and inventory being Rs.3700000, the balance must be prepaid expenses is Rs.50000.

- Sundry Creditors for goods : Book debts are 1.5 times, Sundry Creditors = $1500000 / 1.5 = \text{Rs.}1000000$
- Total Current liabilities being Rs.1250000 of which Rs.1000000 are for goods, the balance of Rs.250000 must be for outstanding expenses.
- Total Assets Turnover is 2 P.a. Hence Total assets is $12000000 / 2 = \text{Rs.}6000000$
- Intangible Assets = $6000000 / 20 = \text{Rs.}300000$.
- The balance of assets i.e. excluding current and intangible assets = $(6000000 - 4050000) = \text{Rs.}1950000$ must be fixed assets (Net).
 Since depreciation has accumulated upto $1/3^{\text{rd}}$ of the cost or $1/2$ of WDV the accumulated depreciation = $1950000 / 2 = \text{Rs.}975000$.
 Hence the cost of fixed assets = $1950000 + 975000 = \text{Rs.}2925000$.
- Interest on debenture being Rs. 75000 @ 10% the principal must be = Rs. 750000
- Total debt is $(750000 + 1250000) = \text{Rs.}2000000$. It is 0.50 of Shareholders' fund. Therefore, Shareholders' fund is Rs. 4000000.
- Preference dividend being Rs. 30000 @ 12% , the Preference Capital must be Rs. 250000.
- After paying preference dividend, the balance of profit is $(1200000 - 30000) = \text{Rs.}1170000$, EPS = Rs. 4.68
 The total number of Equity shares = $1170000 / 4.68 = 250000$.
- The Equity Capital, therefore is Rs. 2500000, the premium @10% is Rs. 250000, the balance of Equity funds must be credit balance in the Profit & Loss account.

Question:

- Explain the differences between unique risk and market risk.
- FUTURALTD. is a manufacturing company in the furniture trade. Its sales have risen sharply over the past 6 months as a result of an improvement in the economy and a strong housing market. The company is now showing signs of overtrading and Ms. A. Basu, General Manager(F&A) is concerned about its liquidity . The company is 1 month from its year end. Estimated figures for the full 12 months of the current year ended March 31, 2006 and forecast for the year ended March 31,2007 , on present cash management policies ,are shown below:

(Amount in Rs. thousand)
Year ended

	March 31, 2007	March 31, 2006
Profit and Loss Account:		
Turnover	5200	4200
Less: Cost of Sales (1)	3224	2520
Operating Expenses	650	500
Operating Profit	1326	1180
Interest paid	54	48

Profit before Tax	1272	1132
Tax payable	305	283
Profit after Tax	967	849
Dividends declared	387	339
Current Assets and Liabilities as at the end of the year:		
Stock/Work in Progress	625	350
Debtors	750	520
Cash	0	25
Trade Creditors	(464)	(320)
Other Creditors (Tax and Dividends)	(692)	(622)
Overdraft	(11)	0
Net Current Assets/(Liabilities)	208	(47)

Note:

1. Cost of Sales includes depreciation of
- | | |
|-----|-----|
| 225 | 175 |
|-----|-----|

Ms. Basu is considering methods of improving the cash position. A number of actions are being discussed:

DEBTORS:

Offer a 2 per cent discount to customers who pay within 10 days of dispatch of invoices. It is estimated that 50 per cent of customers will take advantage of the new discount scheme. The other 50 per cent will continue to take the current average credit period.

TRADE CREDITORS AND STOCK:

Reduce the number of suppliers currently being used and negotiate better terms with those that remain by introducing a Just –in-time policy. The aim will be to reduce the end of year forecast cost of sales excluding depreciation by 5 per cent and stock/work- in- progress levels by 10 per cent. However, the number of days' credit taken by the company will have to fall to 30 days to help persuade suppliers to improve their prices.

OTHER INFORMATION:

- o All trade is on credit. Official terms of sale at present require payment within 30 days. Interest is not charged on late payments.
- o All purchases are made on credit.
- o Operating expenses will be Rs. 650000 under either the existing or proposed policies.
- o Interest payments would be Rs.45000 if the new policies are implemented.
- o Capital expenditure of Rs.550000 is planned for the year ended March 31,2007.

REQUIREMENTS:

Prepare a cash-flow forecast for the year ended March 31, 2007, assuming

- (i) the company does not change its policies;

- (ii) the company's proposals for managing Debtors, creditors and stock are implemented.

In both cases, assume a full 12 month period, that is changes will be effective from day 1 of the year ended March 31, 2007.

4+12=16

Answer to Q 7(a):

Unique Risk:

The unique risk of a security represents that portion of its total risk, which stems from specific factors like the development of a new product, a labour strike, or the emergence of a new competitor. Events of this nature primarily affect the specific firm and not all firms in general. Hence, the unique risk of a stock can be washed away by combining it with other stocks. Unique risk is also referred to as diversifiable risk or unsystematic risk.

MARKET RISK:

The market risk of a stock represents that portion of its risk which is attributable to economy-wide factors like the growth rate of GNP, the level of Government spending, money supply, interest rate structure and inflation rate. Since these factors affect all firms to greater or lesser degree, investors cannot avoid the risk arising from them, however diversified their portfolios may be. Hence it is also referred to as Systematic Risk (as it affects all securities) or non-diversifiable Risk.

Answer to Q 7(b):

FUTURA LTD.

CASH FLOW FORECAST FOR THE YEAR ENDED MARCH 31, 2007

(Amount in Rs. Thousand)

	No change in Policy	Changes Implemented
Profit from Operations (WN 1)	1326	1424
Add: Depreciation	225	225
+/(-) Changes in debtors [WN-3]	(230)	+72
+/(-) Changes in creditors [WN-4]	+144	(86)
	1465	1635
Less: Interest Paid	(54)	(45)
Tax Paid	(283)	(283)
Dividend Paid	(339)	(339)
	789	968
Less: Investing Activities:		
Fixed Assets	(550)	(550)
Stock [WN-2]	(275)	(212)
NET CASH FLOW:	(36)	206
Opening Balance	25	25
CLOSING BALANCE	(11)	231

Working Notes :

Changes Implemented:

(Amount in Rs. thousand)

1. Profit from Operations:	
Turnover	5200
Less: Discount 2% of (0.50 x 5200)	(52)
Cost of Sales [(3224 –225) x 0.95 +225]	(3074)
Operating Expenses (unchanged)	(650)
	1424
2. Stock [350-(625 x 0.90)]	212
3. Decrease in Debtors: 520 – [(2600/365) x 53* + (2600/365) x 10] = (520-448) (750x365)/5200 = 53 days *	72
4. Decrease in trade creditors: 320-(2849**/365) x 30 = 86 (3224-225) x 0.95 =2849**	86

Question:

8. Write short notes on the following:
- (a) Earning Value (Equity share),
 - (b) “ Cash Generating Unit ” (CGU) in the context of accounting for impairment loss;
 - (c) Voluntary Disclosures in Annual reports;
 - (d) Value Added Statement.

4×4 = 16

Answer to Q 8:

SHORT NOTES:

(a) EARNING VALUE (Equity Share) :

“Earning Value” means the value of an equity share computed by taking the average of profits after tax as reduced by the preference dividend and adjusted for extraordinary and non-recurring items, for the immediately preceding three years and further divided by the number of equity shares of the investee company and capitalized at the following rate:

- o In the case of a pre-dominantly manufacturing company, 8%
- o In the case of a pre-dominantly trading company, 10%
- o In the case of any other company, including an NBFC 12%

If the investee company is a loss making company, the earning value will be taken at ZERO.

(b) CASH GENERATING UNIT (CGU) IN THE CONTEXT OF ACCOUNTING FOR IMPAIRMENT LOSS:

The term “CASH GENERATING UNIT” is used in AS-28- Impairment of Assets. As a fundamental principle, an asset should not be carried at an amount higher than its recoverable amount. Recoverable

amount is the higher of the net selling price or the present value of cash flows that the asset will generate from use and from ultimate disposal. If the recoverable amount is lower than the carrying amount, the assets should be written down to the recoverable amount, and impairment loss is recognized. Thus, to test an asset for impairment, its recoverable amount and net selling price should be determined. In most situations, an individual asset does not generate cash flows independently from other assets. Therefore, in order to forecast cash flows to determine the recoverable amount, assets are grouped at the lowest level of the enterprise that generate cash flows independently from others. Assets so grouped are termed as the **CASH GENERATING UNIT**. The impairment loss is determined for the cash generating unit and is then allocated to individual assets that constitute the unit.

(c) VOLUNTARY DISCLOSURES IN ANNUAL REPORTS:

Voluntary Disclosures play a very important role in making corporate financial reporting full and fair. Corporate financial reports are prepared according to generally accepted accounting principles (GAAP). It is generally believed that, if financial reports are prepared strictly in accordance with GAAP, they will be full and fair. But this may not be true. GAAP cannot take care of each and every financial reporting issue facing the business enterprise. Voluntary Disclosures are needed to cover GAAP reporting deficiencies. These disclosures are made outside the basic financial statements. Leading business enterprises throughout the world disclose a large volume of information on a voluntary basis. The disclosures that are made on a voluntary basis include information about intellectual assets, future forecasts, future commitments and contingencies, and other judgemental and interpretive data. In most case, voluntary disclosures are confined to favourable news. But, to be of real use, voluntary disclosures should embrace both favourable and unfavourable developments.

(d) VALUE ADDED SATETMENT:

VALUE ADDED SATETMENT (VAS) is a new innovation in corporate financial Reporting. Many enterprises now include the Statement of Value added in their published financial reports. The principal objective of the VAS is to provide information about the value creating activity of the enterprise. Value Added is defined as the excess of the value of output generated by the enterprise over and above the value of goods and services acquired from external sources and consumed in the process of generation of that output. There are several formats for the Value Added Statement. The format shown below is the most commonly encountered one:

VALUE ADDED SATETMENT FOR	Rs.
Value of Output	xxx
Less: Bought-in-goods and services	xxx
VALUE ADDED	xxx
APPLICATION	
Employees (Salaries, Wages)	xxx
Government (Taxes)	xxx
Providers of Capital (Interest & Dividend)	xxx
The Enterprise (Retention)	xxx
VALUE ADDED	xxx

The Value Added Statement serves a very useful purpose in placing profit into perspective and in assessing the adaptive capacity of the enterprise.

FINAL EXAMINATION –STAGE IV (REVISED SYLLABUS)

SUGGESTED ANSWERS TO QUESTIONS

December 2006

PAPER 19 : COST AUDIT AND MANAGEMENT AUDIT

Answer Question Nos. 1 and 5 , which are compulsory and
two each from the remaining questions of Section I & II.

SECTION - I (50 marks)

Question :

1.(a) State whether the following statements are "True" or "False". Justify with reasons

2 × 5 = 10

- (i) Cost Audit Firm is appointed as Internal Auditor of Textile unit and Cost Auditor of Fertilizer Unit of the same company. T
- (ii) A Cost Accountant gives a certificate of cost for a product manufactured by an SSI unit owned entirely by his son. F
- (iii) Under the present day scenario of "liberalized economy", the importance of Cost Audit has diminished. F
- (iv) Amortization of deferred expenses will always be same in Financial Accounts and Cost Accounts. F
- (v) The Excise officers, Excise Auditors and Auditors appointed by C&AG (CERAAuditors) have the powers to demand the Cost Audit Report. T

(b) Which of the following is correct?

1 × 5 = 5

- (i) The Financial year of a Detergent Company is from 01.01.2005 to 31.12.2005. When does the Cost Audit Report to be submitted?
 (1) 31st March, 2006
 (2) 30th September, 2006
 (3) 30th June, 2006

- (ii) Draft for appointment of Cost Auditor for paid up capital of Rs. 30 lakh sent to Department of Company Affairs.
 (1) Rs. 500/-
 (2) Rs.10,000/-
 (3) Rs.1,000/-
- (iii) Man days available for one worker for a year of total days=365, weekly off=50, Absent for Sick etc.=20, Lay off=5 & Paid Holidays=10
 (1) 300 days
 (2) 280 days
 (3) 310 days
- (iv) Under Para 23, Cost of bought out Services includes:
 (1) Raw Materials
 (2) Cost of Utilities
 (3) Indirect Material
- (v) Under Para 4, Third party on job work means
 (1) the company has manufactured goods for others
 (2) the company gets manufactured goods from outside parties
 (3) the company has manufactured and gets goods manufactured from outside parties.

(c) Fill in the blanks with appropriate word/words:

1 × 5 = 5

- (i) _____ is the verification of the correctness of cost accounts and adherence to Cost Accounting principles.
- (ii) Two of the basic principles governing an audit are _____ and _____.
- (iii) Value addition is the difference between _____ and the cost of bought materials and services.
- (iv) Form No. _____ is used for seeking the approval of the Central Government for appointment of a Cost Auditor.
- (v) _____ is defined as Share Capital plus reserves and surplus less accumulated losses and intangible assets.

Answer to question 1(a)

- (i) "TRUE" as two units are separate though it may be under same management.
- (ii) "FALSE" - Strictly speaking, a Cost Accountant issuing a certificate for a unit, in which he has no direct interest, is in order. In the instant case, since Cost Accountant's son owns the SSI unit, it will be prudent on the part of the Cost Accountant to desist from issuing such a certificate on moral grounds.

- (iii) "FALSE"- Rather the necessity for and utility of properly documented cost data under a Cost Audit Report is keenly felt than ever before. The Cost Audit Reports now have assumed greater importance and significant under "liberalized economy".
- (iv) "FALSE"- Amortisation of deferred expense charge will be different

Financial A/cs - Benefit of expenses may extend for a period of 6 years i.e., yearly 1/6th of Total Amount.

Cost A/cs- The Benefit of expense may extend for a production quantity of 20,000 numbers and assuming equal production quantity of six thousand numbers for each of the three years, which will work out at 30% of total amount, may be the amortization charge for each year in Cost Accounts.

- (v) "TRUE"- As per the relevant provisions of the Central Excise Rule-22 subrule(3), the Excise Officers, Excise Auditors and Auditors appointed by C & AG (CERA Auditors) have the power to demand the Cost Audit Report.

Answer to question 1(b)

- (i) "3" as Cost Audit Report is to be submitted within 180 days from the date of closing i.e., within 30th June, 2006.
- (ii) "3" - Draft will be Rs.1000/- (the slab for paid up Capital upto Rs.25 lakh, Draft amount is Rs.500/-) Where paid up capital is more than Rs. 25 lakhs but less than Rs.5 crores – Draft Amount will be Rs.1000/-.
- (iii) "1"- as Man days available is calculated as follows:-

Total Days	=	365 days
Less: Weekly off	=	50 days
Less: Lay off	=	5 days
Less: Paid Holidays	=	10 days
		<u>300 days</u>

- (iv) "2" – under para 23, Cost of bought out services includes Cost of Utilities such as Power, Water, Steam etc. which are purchased
- (v) "1" – as per under para 4(4)(b) Third Party on job work means the company has manufactured goods for others.

Answer to question 1(c)

- (i) Cost Audit
- (ii) Confidentiality, objectivity

- (iii) Net Sales
- (iv) 23C
- (v) Net Worth

Question :

2. The following figures are extracted from the Annual Report of Eastern Industries Ltd. .

	31.3.2006 (Rs. in lakhs)	31.3.2005 (Rs. in lakhs)
SOURCES: Share Capital	2,400	2,400
Reserves and Surplus:		
General Reserves	21,000	22,200
Debenture Redemption Reserve	11,300	5,700
Revaluation Reserve	6,200	7,400
Profit & Loss Account	200	2,200
Secured Loans:	38,700	37,500
Debentures	48,000	22,000
Term Loans	5,300	14,100
Cash Credit	7,800	7,150
Unsecured Loans:	61,100	43,250
Fixed Deposits	2,000	2,250
Interest Free Sales Tax Loan	9,000	7,250
TOTAL	<u>1,13,200</u>	<u>92,650</u>
APPLICATION OF FUNDS:		
Net Block	86,650	72,350
Capital Work-in-Progress	8,250	1,800
Investments	5,050	5,600
Current Assets, Loans & Advances	24,900	21,850
Current Liabilities & Provisions	11,800	9,050
Miscellaneous Expenditure	150	100
TOTAL	<u>1,13,200</u>	<u>92,650</u>

Notes:

1. Debentures are redeemable as follows:-

Rs.120 Crores at the end of the 5th, 6th and 7th years in equal installments. The earliest date of redemption is 30.09.2006.

Rs.100 Crores in five semi-annual installments from 30.06.2006.

Rs.260 Crores in five semi-annual installments of Rs.40 Crores and one final installment of Rs.60 Crores Commencing from 30.06.2010.

2. Term Loans and Fixed Deposits payable before 31.3.2007: Rs.1150lakhs (previous year: Rs.4050 lakhs).
3. Rs.3000 lakhs of Interest Free Sales Tax Loan is repayable on 30.11.2006.
4. Net Block includes Value of Brand Equity (brands purchased) Rs.1250 lakhs (previous year Rs.1450 lakhs)

You are required to Calculate:

- a) Capital employed as defined in the Annexure to the Cost Audit Report. 10
- b) Debt-equity Ratio as on 31.03.2006. 5

Answer to question 2(a)

Capital Employed:

	31.03.2006 (Rs. in lakh)	31.03.2005 (Rs. in lakh)
SOURCES:		
Net Block	86,650	72,350
Less: Revaluation Reserve	6,200	7,400
Less: Intangible Assets(Brand Equity)	1,250	1,450
Net Current Assets	13,100	12,800
Less: Debt due within 12 months		
Debentures	8,000	-
Term Loans/Fixed Deposits	1,150	4,050
Interest Free Sales Tax Loans	3,000	950
Capital Employed	80,150	72,250

Average Capital Employed = $\frac{80,150 + 72,250}{2} = 76,200$

Answer to question 2(b)

Debt-Equity Ratio:

Debt:	Debentures	48,000	
	Term Loans	5,300	
	Fixed Deposits	2,000	
	Interest Free Sale Tax Loan	9,000	
		64,300	
	Less: Due within 12 months	12,150	52,150

Equity:	Share Capital	2,400	
	Reserves excluding Revaluation Reserve	32,500	34,900

Debt-Equity Ratio = $52150 : 34900 = 1.49 : 1$

Question :

3. The following data have been collected by you, as Cost Auditor of a Company.

	2003-04	2004-05	2005-06
Installed Capacity (lakh in MT)	2.5	2.5	2.5
Production (lakh in MT)	2.4	2.3	1.25
Cost per MT of the Production (Rs.)	1000	1077	1660

The poor capacity utilization in 2005-06 was due to abnormal power cut. The escalation in costs were 5% in 2004-05 and 7% over 2004-05 in 2005-06.

- a) Calculate the abnormal cost due to power cut.
- b) How would you treat these abnormal costs?
- c) What suggestion can you make to reduce/avoid the abnormal costs?

8+3+4 = 15

Answer to question 3

	2003-04	2004-05	2005-06
Installed Capacity (lakh MT)	2.5	2.5	2.5
Production (lakh MT)	2.4	2.3	1.25
% of Capacity Utilization	96	92	50
Cost per Unit (Rs/MT)	1000	1077	1660
Escalation Factor	100	105	107
Cost at base year price	1000	1026	1551
Total Cost of Production(Rs. in lakh)	2400	2359.8	1938.75
Variable Cost/MT (Rs.)	402	402	402
Fixed Cost/MT (Rs.)	598	624	1149
Fixed Cost @ 100% Utilization	574		

Hence,

increase in Fixed Cost/MT due to poor capacity utilization in 2005-06 = Rs.(1149-574)
= Rs.575

- (i) Total abnormal cost due to power cut = $575 \times 1.25 = \text{Rs.}718.75$ lakh
- (ii) This abnormal cost must be excluded from the computation of cost and has to be shown under para 17 of the Cost Audit Report (Abnormal non-recurring costs).
- (iii) The 50% under utilization of capacity, being due to power cut only, the company should consider possibility of captive generation, if the power cut is likely to persist. Accordingly, the investment needed, potential savings etc. must be computed to determine the viability of such a decision.

Working Notes :

As compared 2003-04

A.	Difference in Total Cost (Rs.in lakh)	2004-05 2400-2359.8 = 40.2	2005-06 2400-1938.75 = 461.25
B.	Difference in Production (lakh MT)	2.4-2.3 =0.1	2.4-1.25 = 1.15
	Hence, Variable Cost / MT (Rs.) = A ÷ B	402	402

Question :

4.(a) The financial profit and loss account for the last year ended of a company shows a net profit of Rs.26,28,000. During the course of cost audit, it was noticed that:

- (i) The company was engaged in trading activity by purchasing goods at Rs.4,00,000 and selling it for Rs.5,00,000 after incurring an expenditure of Rs.25,000.
- (ii) Some old assets sold off at the year-end fetching a profit of Rs.80,000.
- (iii) A major overhaul of machinery was carried out at a cost of Rs.4,00,000 and the next such overhaul will be done only after four years.
- (iv) Interest was received amounting to Rs. 1,50,000 from outside investments.
- (v) Depreciation to the extent of Rs.2,25,000 was provided on the revaluation value of assets.
- (vi) Work-in-progress valuation for financial accounts does not as a practice take into account factory overhead. This amount was Rs.1,85,000 in opening WIP and Rs.3,15,000 in closing WIP.

Work out the profit as per Cost accounts and briefly explain the adjustment, if any carried out.

4. (b) What information has to be provided by a Cost Auditor for "Written off Stock" during the year under para 18(B)?

Answer to question 4(a)

Reconciliation Statement:

	Rs.	Rs.
Add (i) Profit as per financial Profit and Loss A/c		26,28,000
Proportionate change i.e., one-fourth for Overhaul of machinery not provided in cost accounts.		
(ii) Depreciation provided on revaluation of assets	3,00,000*	
(iii) Difference in Valuation of WIP	2,25,000	
	<u>1,30,000</u>	<u>6,55,000</u>
		32,83,000

Less: (i) Trading on sale of assets not included in cost accounts	75,000	
(ii) Profit on sale of old assets not included in cost accounts	80,000	
(iii) Interest received on outside investment not shown in cost accounts	<u>1,50,000</u>	<u>3,05,000</u>
Profit as per Cost Accounts		<u>29,78,000</u>

* Note: In the Financial accounts the entire cost of overhaul of machinery has been written off. In order to make a proportionate charge i.e., for one year, one-fourth of Rs.4,00,000 i.e., Rs.1,00,000 only should be charged. Therefore, Rs.3,00,00 has been added to the financial profit.

Answer to question 4(b)

Under para 18(B) the following information has to be provided by the Cost Auditor.

- 1. Direct Material
- 2. Indirect Material
- 3. W I P
- 4. Finished Goods
- 5. Total

The information may be further grouped in various categories suitable for analyses. Cost Auditor should review -

- a) the cause explained by the company for "written off" of the items.
- b) the action taken by the company for recovery of realizable value/ residual value
- c) the accounting policy of the company for written off of various categories of inventory.

Section II (50 marks)

Question :

5. (a) Whether the following statements are "TRUE" or "FALSE" justify with reason:
- (i) Energy Audit means monitoring the energy efficiency of different equipment and process.
 - (ii) Productivity Audit is basically the analysis of the productivity of the resources.
 - (iii) The goods are imported and stored in warehouse under bond and can be re-exported without duty within five years from date of import.

- (iv) Cost of production of goods cleared for captive consumption should be certified as per CAS-4 only by a practicing Cost Accountant. $2 \times 5 = 10$
- (v) Management Audit extends beyond Operations Audit. $1 \times 5 = 5$
- (b) Indicate the functional area you will take up for Management Audit for verification of the following transactions:
- Consumption of fuel in the Captive Power Plant.
 - Control of traveling expenses of sales representatives.
 - Excessive idle time in one of the production departments.
 - Credit allowed to customers
 - Cost of training of employees.
- (c) Explain in brief the basic differences between any two out of the following:
- Corporate Image and Brand Equity;
 - Sales Tax and Excise;
 - Valuation Audit and Cenvat Audit;

Answer to question 5(a)

- "TRUE" as Energy Audit gives suggestion how energy consumed can be cut down without affecting Production.
- "TRUE" as Productivity Audit is the analysis of the productivity of the resources deployed by an organization. Resources would include 'Money', 'Men', 'Machines', 'Materials' and 'Methods'.
- "FALSE" as the re-export must be within three years from the date of import.
- "TRUE" - out of total available quantity, it should be expressed as (i) Quantity captively consumed (ii) Quantity sold under different categories and (iii) Closing stock.
- "TRUE" - it extends to the entire management decision making areas and has a broader time frame to analyze past, present and the future for qualitative audit brings out errors of policy decisions and actions with recommendations to avoid them.

Answer to question 5(b)

- Operations
- Marketing
- Production
- Marketing and Accounts
- Personnel (HRD)

Answer to question 5(c)

- "Corporate Image" stands for the qualities which the general public attributes to a corporate body e.g., House of Tatas, Birlas etc.
"Brand Equity" stands for the brand/ quality formed by the consumers belief about the special attributes of a product, e.g., "Hamam", "Surf", "Dettol" etc.
- "Sales Tax" is a tax on sales and hence can be imposed only where there is a sale. But, "Excise Duty" is a duty on manufacture and the duty liability is fastened immediately after goods are manufactured, whether these are sold or not is immaterial.
- "Valuation Audit" is ordered in order to ensure that the excise duty has been paid on the correct "assessable value". Such an audit are ordered as per sec-14A of C E A. This can be ordered only with the approval of Chief Commissioner of Central Excise. "Cenvat Audit" is a special audit u/s-14AA of C E A. This audit is done to ascertain if Cenvat Credit has been availed of/utilized correctly or not. Such an audit is ordered by the Commissioner of Central Excise and can only be carried out by a practicing Cost Accountant.

Question :

6. A company suffered heavy damages of Plant and Machinery by tsunami tidal waves and had to close the factory for two months. A claim was logged with the insurance company for loss of machinery as well as loss of profits. A Cost Accountant was appointed as insurance surveyor and he made an exhaustive study of the damages and discussed the draft report with the concerned claimant company(insured). Is this ethical? State the legal position in this regard and explain the ethics of the profession.

15

Answer to question 6

The role of insurance surveyor is to measure, assess and report on the insured's financial loss or damage. Their report is the basis on which the insurance companies compensate the insured. The surveyors deal with both physical and moral hazards. He handles claims that at times arise out of natural calamities like floods, cyclones, earthquake etc. or heavy claims arising out of fire accidents. Sometimes there are attempts to cheat the insurance companies by fraudulent claims.

There is no express prohibition preventing the surveyor from discussing the nature or extent of loss or the basis on which the claims have been computed, but he is mainly accountable and responsible to the insurance company by which he is engaged. He should not succumb to any kind of pressure or influence exerted by the insured. The final report should, however, never be discussed with the claimant.

Ethics of the procession of insurance surveyors are broadly laid down in subsection 7 of section 64 UM of the Insurance Act, viz, that an approved surveyor must not willfully make a false statement and that he must not knowingly be a party to the settlement of a claim in a fraudulent manner.

The Institute of Cost and Works Accountants of India has laid down the norms of professional ethics for members in practice in regard to the following areas which apply equally to the assignment of insurance survey also.

- (a) Independence, integrity and objectivity - He must not allow prejudice or bias to override objectivity and should maintain impartial attitude while reporting on financial statements or costs.
- (b) A member should be and should appear to be free of any interest which might be incompatible with integrity and objectivity.
- (c) A member shall not have substantial financial involvement in the client's affairs/ business (in this case the insured's).
- (d) If a member has any family or personal relationship with the insured, it should be disclosed.
- (e) A member should keep the information acquired in the course of work confidential.

Question :

7. What is Corporate Governance? State the key aspects which should be shared by the Board.

5+10 = 15

Answer to question 7

Corporate Governance is a system by which companies are directed and controlled by the management in the best interest of the shareholders as well as others with greater transparency and better and timely reporting.

Corporate Governance is key to survival in the competitive business environment and the corporate governance codes all over the world are directed to achieve good Corporate Governance through Non-executive Directors.

The following aspects which should be shared by the Board are as follows:

1. Annual operating plans and budgets together with updated long term plans.
2. Capital Budgets, man-power and overhead budgets.
3. Quarterly results for the company as a whole and its operating division for business segments.
4. Internal audit reports, including cases of theft and dishonesty of a material nature.
5. Details of any joint venture or collaboration agreement.
6. Transactions that involve substantial payment towards goodwill, brand equity or intellectual property.

7. Labour problem and their proposed solutions.
8. Fatal or serious accidents, dangerous occurrences and any effluent or pollution problems.
9. Default in payment of interest or non-payment of the principal or any secured creditors or financial institutions.
10. Recruitment and remuneration of Senior Officers just below the Board level, including appointment or renewal of the Chief Financial Officer and the Company Secretary.
11. Show Cause, demand and prosecution notices received from the revenue authorities which are considered to be materially important.
12. Quarterly details of foreign exchange exposure and the steps taken by management to limit the risk of adverse exchange rate movement.

Question :

8. Write short notes on (any three):

- (a) VAT;
- (b) Service Tax;
- (c) Desk Review of EA-2000 Audit;
- (d) Management Audit Programme.

5 × 3 = 15

Answer to question 8 (a)

VAT:

VAT stands for "Value Added Tax". Concept of VAT has been developed to avoid cascading effect of taxes. VAT has been found to be a very good and transparent tax collection system, which reduces tax evasion, ensures better tax compliance and increases tax revenue.

Generally, any tax is related to the selling price of the product. In modern production technology, raw material passes through various stages and processes till it reaches the ultimate stage e.g., steel ingot are made in a steel mill. These are rolled into plates by a re-rolling mill/unit, while the next manufacturer makes furniture from these plates. Thus the output of the first manufacturer becomes the input for the second manufacturer, who in turn carries out further processing and supplies it to the third manufacturer. This process thus continues till a final product emerges. This product then goes to the wholesaler/distributors, who sales it to the retailer and then it reaches to the ultimate customer.

If a tax is based on selling price of a product, the tax burden goes on increasing as raw material and final product passes from one stage to another. For example, let us assume that tax on a product is 10% of selling price. Manufacturer 'A' supplies his output to 'B' at Rs.100. Thus, 'B' gets the material at Rs.110 inclusive of tax @ 10%. He carries out further processing and sells his output to 'C' at Rs.150. While calculating his cost, 'B' has considered his purchase cost of materials as Rs.110 and added Rs.40 as his conversion charges. While selling product to 'C', B will charge tax again @ 10%.

Thus, 'C' will get the item at Rs. 165 (150+10% tax). As stages of production and/or sales continue, each subsequent purchaser has to pay tax again and again on the material which has already suffered tax. This is called cascading effect.

VAT was developed to avoid cascading effect of taxes. In the aforesaid example, "Value Added" by 'B' is only Rs. 40 (150-110), tax on which would have been only Rs. 4, while tax paid was Rs. 15. In VAT, the idea is that B will pay tax on only Rs. 40 i.e. Value added by him. Then, it makes no difference whether a product passes through 5 or 10 stages, as every person will pay tax only on "Value Added" by him to the product and not on total selling price. VAT is a tax credit system, under which credit is given at each stage of tax paid at earlier stage.

Answer to question 8(b)

Service Tax:

The provision to Service Tax were brought into force with effect from 1st July, 1994 to whole of India except the state of Jammu & Kashmir. The services, brought under the tax net in the year 1994-95 were Telephone, Stockbroker and general Insurance. Under section 65(105) of Finance Act, 1994. The Finance Act(2) 1996 enlarged the scope of levy of Service Tax covering three more services viz, Advertising agencies, courier agencies and Radio pager services. The Finance Act of 1997 and 1998 further extended the scope of service tax to cover a larger number of services rendered by service providers like- consulting engineer, custom house agents, steamer agents, clearing and forwarding agent, Air travel agent, Tour operators, Govt. of India notified imposition of Service Tax on twelve new services in 1998-99 Union Budget. These services were – Architects, Interior Decorator, Management Consultants, Practicing Chartered Accountants, Practicing Company Secretaries, Practicing Cost Accountants, Real Estate Agents/Consultants, Credit Rating Agencies, Private securities Agencies, Market Research Agencies and underwriters Agencies etc. In the Budget 2002-2003, 10 more services have been added to the tax net. In the Budget of 2003-2004 to 2005-2006, more and more services brought under the service tax net, the service tax revenue would now form a major part in Govt. Revenue earnings. Service Tax is administered by the Central Excise Commissioners working under the Central Board of Excise and Customs,

Department of Revenue, Ministry of Finance, Govt. of India. Further an education cess of 2% of Service tax has been imposed vide section 95 of the Finance Act, 2004. System of self-assessment of Service Tax Returns by Service Tax assessee has been introduced w.e.f. 01.04.2001. The jurisdictional superintendent of Central Excise is authorized to cross verify the correctness of self-assessed returns. Tax returns are expected to be filed half yearly.

Answer to question 8(c)

Desk Review of EA-2000 Audit:

Central Board of Excise and customs vide a circular issued in November, 2005 has decided to take up the help of Practicing Chartered/ Cost Accountants in the Desk Review of EA-2000 Audit. This consists as first step of gathering advance information about assessee from departmental records,

published documents like Balance Sheet, annual statements etc., analysis of returns submitted by the assessee, Cost audit report collecting other details from assessee and through enquiries and identifying areas where revenue leakage is possible. This helps in finalizing audit plan, so that concentration can be made in those areas during audit. Thus Desk Review helps in concentrating audit efforts on major areas. Offer of "Desk Review" to Cost Accountant is an acknowledgement of his skills and knowledge in indirect taxes. Industries will also except Cost Accountants to guide them in submission of these returns so that they can answer audit queries properly. Desk Review will open a new field for practice by a Cost Accountant from department side as well as assessee side. Through Desk Review, the audit team decides the areas where it will concentrate during audit i.e., possible area of revenue leakage. At the Desk Review stage, there is only scrutiny of returns and records available with department. There is no contact with assessee at that stage. As per the circulars issued, Chartered Accountant will study ER-4 returns while Cost Accountant will scrutinize ER-5 and ER-6 returns. He will have to study assessee's master file available with the excise department, other returns submitted by the assessee, Balance Sheets, Cost Audit Report, audit report u/s 44AB of Income Tax Act, his past records etc. to enable him to take an overall view of the business of the assessee and possible revenue leakages.

There is no doubt that the Cost Accountant should possess adequate knowledge of excise-law-particularly Valuation and Cenvat – so that he can do a good job of a "Desk Review".

Answer to question 8(d)

Management Audit Programme:

1. Review of the organizational objectives and plans.
2. Study of the policies and practices of the management.
3. A critical review of the organizational structure.
4. Study of the systems and procedures.
5. Evaluation of operations.
6. Study of the efficiency of the use of physical resources available.
7. Exercise of proper management control.
8. Maintain a suitable monitoring system through management information system (MIS).
9. Check on adherence to the statutory obligation and
10. Above all, review the efficiency of manpower handling, which ultimately results in the organization's success.

FINAL EXAMINATION – STAGE IV

(REVISED SYLLABUS)

SUGGESTED ANSWERS TO QUESTIONS
DECEMBER 2006

PAPER – 20 : VALUATIONS MANAGEMENT AND CASE STUDY

Answer Question No. 1 which is Compulsory Carrying 20 Marks and any Five from the rest.

Question :

1 (a) State whether the following statements are TRUE or FALSE: 1×6

- ☒ (i) The dividend discount model generally tends to overvalue stocks when the overall market is depressed. (True/False)
- ☒ (ii) When stock buy backs take place, valuation on the basis of dividend payout ratio will overestimate the value of equity in firms. (True/False)
- ☒ (iii) Whenever the required return is different from the coupon interest rate, the amount of time to maturity does not affect bond value. (True/False)
- ☒ (iv) The constant growth model assumes that dividends will grow at a constant rate but a rate that is less than the required return. (True/False)
- ☒ (v) Corporate brands and service brands are often perceived to be interchangeable. (True/False)
- ☒ (vi) For calculating the value of an equity share by yield method, it is essential to know capital employed. (True/False)

(b) Fill in the blanks by filling in the appropriate word(s) given in the brackets: 1×4

- (i) The factor that affects the cost of bonds to the issuer is _____ (size of offering /cost of equity capital)

- (ii) A put option provides the holder the right to _____ the underlying security. (sell / buy)
- (iii) Diversification reduces risk at _____ rate as more and more securities are added to a portfolio. (increasing / decreasing)
- (iv) A warrant is a _____ option on the equity stock of the issuing company. (call / put)
- (c) Attempt the questions by selecting the correct option: 2×5
 - (i) Whenever investors find that the expected return is not equal to the required return –
 - ☒ (a) A market price adjustment occurs. (Yes / No)
 - ☒ (b) A market price adjustment does not occur (Yes / No)
 - (ii) If the expected return is less than the required return –
 - ☒ (a) Investors sell the asset. (Yes / No)
 - ☒ (b) Investors would buy the asset. (Yes / No)
 - (iii) If the expected return is above the required return –
 - ☒ (a) Investors would buy the asset. (Yes / No)
 - ☒ (b) Investors sell the asset. (Yes / No)
 - (iv) The Beta Coefficient is measured by –
 - ☒ (a) The unsystematic risk of an asset in relation to that of the market portfolio.
 - ☒ (b) The non-diversifiable risk of an asset in relation to that of the market portfolio.
 - (c) The market risk of a security in relation to that of the market portfolio.
 - (d) The systematic risk of an asset in relation to that of the unsystematic risk of an asset.
 - (v) Which of the following is not an assumption of Gordon growth model using dividend capitalization ?
 - ☒ (a) Retained earnings represent the only source of financing.
 - ☒ (b) Rate of return is variable.
 - (c) Cost of capital remains constant and is greater than growth rate.
 - (d) The company has perpetual life.

Answer to Q.1.

- (a) (i) True
- (ii) False
- (iii) False
- (iv) True
- (v) True
- (vi) False

- (b) (i) Size of offering
(ii) Sell
(iii) Increasing
(iv) Call
- (c) (i) (a) Yes (b) No
(ii) (a) Yes (b) No
(iii) (a) Yes (b) No
(iv) (b)
(v) (b)

Question

- 2 (a) Discuss how effectively shareholder value analysis indicates the creation of economic value for shareholders.

6

- (b) The following data relates to Morning Glory Limited :

	Profit and Loss data	
	20×1 Rs. in lakh	20×2 Rs in lakh
Turnover	1990	2360
Pre-tax accounting Profit	420	530
Taxation	126	160
Profit after Tax	294	370
Dividends	100	120
Retained Earnings	194	250

	Balance Sheet data	
	20×1 Rs in lakh	20×2 Rs in lakh
Fixed Assets	740	960
Net Current Assets	800	1000
	1540	1960
Financed by Shareholders Funds	1190	1440
Medium and long term Bank loans	350	520
	1540	1960

Pre-tax accounting profit is taken after deducting the economic depreciation of the company's fixed assets (also the depreciation used for tax purposes).

Additional information:

- (i) Economic depreciations were Rs 190 lakh in 20×1 and Rs 210 lakh in 20×2.
(ii) Interest expenses were Rs 26 lakh in 20×1 and Rs 36 lakh in 20×2.
(iii) Other non-cash expenses were Rs 64 lakh in 20×1 and Rs 72 lakh in 20×2.
(iv) The tax rate in 20×1 and 20×2 was 30%.
(v) Morning Glory Limited has non-capitalized leases valued at Rs 70 lakh in each year, 20×0 to 20×2.
(vi) The company's pre-tax cost of debt was estimated as 7% in 20×1 and 8% in 20×2.
(vii) The company's cost of equity was estimated as 14% in 20×1 and 16% in 20×2.
(viii) The target capital structure is 75% equity and 25% debt.
(ix) Balance sheet capital employed at the end of 20×0 was Rs 1390 lakh.

Estimate the economic value added for Morning Glory Limited for 20×1 and 20×2.

10

Answer to Q. 2:

- (a) Shareholder value analysis focuses on the creation of economic value for shareholders, as measured by the share price performance and the flow of dividends. Under shareholder value analysis key decisions with implications for cash flow and risk are specified.

These will be decisions that impact upon value drivers, factors that have the greatest impact on shareholder value, such as sales growth rate, profit margin, working capital investment and the required rate of return under the model.

Corporate value : PV of free cash flows + Current value of marketable securities and other non-operating investments.

And Shareholder value = Corporate value – debt.

- (b) Economic value added (EVA) may be defined as:
Net operating profit after tax (NOPAT) - (Capital employed × Cost of capital)

	20×1 Rs in lakh	20×2 Rs in lakh
Computation of NOPAT:		
Profit after tax	294	370
Add Non-cash expenses	64	72
Interest after tax charge (1-0.30)	18.2	25.2
	Rs 376.2	Rs 467.2
Computation of Capital employed:		
Capital employed at end of 20×0 + Leases	1390 + 70	
	Rs 1460	
Book value of shareholders' fund + Bank loans + Leases	1190 + 350 + 70	
		Rs 1610

Computation of Weighted average cost of capital:

$$\begin{aligned} &0.75 \times 14\% + 0.25 \times 7\% (1-0.3) && 11.7\% \text{ (approx)} \\ &0.75 \times 16\% + 0.25 \times 8\% (1-0.3) && 13.4\% \end{aligned}$$

Computation of EVA:

$$\begin{aligned} &376.2 - 1460 \times 11.7\% && \text{Rs } 205.38 \\ &467.2 - 1610 \times 13.4\% && \text{Rs } 251.46 \end{aligned}$$

The Company has created significant value in both 20x1 and 20x2.

Question:

3. Sumangai Developer, a leading promoter and land developer, intends to construct luxury apartments this year or a year hence. The company has already acquired a vacant land in a residential area. Mr. Mounir, the technical director, along with Mr. Chitto, the financial director, has worked out the following data to decide on when to construct the apartments:

- Current interest rate = 12%
- Current value of an apartment = Rs 20 lakh
- Value of an apartment a year from now :
 - Rs 26 lakh under favorable conditions;
 - Rs 16 lakh under unfavorable conditions
- Construction costs (this year as well as next year) :
 - For a 8-unit building = Rs 90 lakh;
 - For a 12-unit building = Rs 120 lakh.

You are required to estimate the value of land using option pricing model approach and decide whether Sumangai Developer has to construct in the current year or next year, a 8-unit building or a 12-unit building.

Answer to Q. 3:

Let us find which value of the land is higher if it is developed immediately:

	With 8-unit building	With 12-unit Building
	Rs Lakh	Rs Lakh
Value of apartments	8 x Rs 20 L	12 x Rs 20
(Less) Construction cost	(90)	(120)
Net value	70	120

So, the value of the land if developed currently for 12-unit building is taken as Rs 120 lakh.

If the construction is postponed to next year, the net value is expected to be:
Under favorable conditions 8 x Rs 26 L – 90 L = Rs 118 Lakh 12 x Rs 26 – 120 = Rs 192 Lakh
Under unfavorable conditions 8 x Rs 16 L – 90 L = Rs 38 Lakh 12 x Rs 16 – 120 = Rs 72 Lakh
In either case, 12-unit building is preferable. But, to estimate the value of the land a year hence, we may use Binomial (option pricing) model approach, as follows:

- Let S = Present value of an apartment = Rs 20 lakh
R = Interest factor = 1+r = 1.12
Cu = Value of the call option, just before expiration, if the apartment price goes up = Rs 192 lakh
Cd = Value of the call option, if the apartment price falls = Rs 72 lakh
u = Factor reflecting the upward movement = 26/20 = 1.3
d = Factor reflecting the downward movement = 16/20 = 0.8
$$\Delta = (Cu - Cd) / S(u - d) = 12$$
$$B = (uCd - dCu) / (u - d)R = -60/0.56$$

[by substituting the above values]
[-do-]

The value of the land is = AS + B = 12 x 20 + (-107) = Rs 133 lakh.

Hence, the apartment should be constructed next year, as Sumangai will earn additional income of Rs 13 lakh (Rs 133 Lakh –Rs 120 Lakh).

Question:

4. Laxmi Private Limited is negotiating to sell their business to a public limited company. The following is a summarized extract from the Balance Sheet as on 31st March, 2006 of Laxmi Private Limited:

	Rs
Capital, 1,000 shares of Rs 1,000 each	10,00,000
Free Reserve	2,00,000
	12,00,000
Fixed Assets at depreciated cost	6,40,000
Current Assets	Rs 7,20,000
(-) Current Liabilities	1,60,000
	5,60,000
	12,00,000

The profits of Laxmi Private Limited for the last five years it has been in existence, after eliminating any extraneous or non-recurring debits and credits, were Rs 90,000; Rs 1,30,000; Rs 1,15,000; Rs 2,40,000 and Rs 2,75,000. A return of 10% on the capital employed is considered to be reasonable in this particular business and it is expected that future requirements as to capital will not vary materially from the capital employed as on 31st March.

Ignoring any extraneous factors that may affect the position, suggest the amount that should reasonably be paid to the private company for the goodwill for acquiring the company, by giving details of how you work out this amount and any assumption you consider it necessary to make.

Answer to Q. 4:

Average profit for the past 5 years = Rs (90,000 + 130,000 + 115,000 + 240,000 + 275,000)/5 = Rs 170,000.
[simple average is taken as there is no uniform trend in profits].

Reasonable return on capital employed = 10% of Rs 1,200,000 = Rs 120,000.

Super profit = Rs 170,000 – Rs 120,000 = Rs 50,000.

It is assumed that the period of 3 years is the reasonable period for calculation of goodwill on the basis of super profit [a shorter or a longer period may be assumed as an alternative reasonable period, depending on the type of business, products and market competition].

Goodwill = Rs 50,000 × 3 = Rs 150,000.

The problem can be solved alternatively according to Capitalization method, if it is expected that the profit so earned will continue to be earned for long and the capitalization rate remains as it is Goodwill by this method will be valued as:

Rs 170,000/0.10 = Rs 1,70,00,000 (capital employed) = Rs 1,70,00,000.

Question :

- 5 (a) Explain why synergy might exist when one company merges with or takes over another company.
- 6
- (b) The total values both equity and debt of two companies, Sun Ltd and Moon Ltd, are expected to fluctuate according to the state of the economy:

	Probabability	Economic state		
		Recession	Slow growth	Rapid growth
Total Values:		0.15	0.65	0.20
Sun Ltd (Rs in lakh)		126	165	225
Moon Ltd (Rs in lakh)		189	240	360

Currently, Sun Ltd has Rs 135 lakh of debt, and Moon Ltd Rs 30 lakh of debt.

If the two companies were to merge and assuming that no operational synergy occurs as a result of the merger, calculate the expected value of debt and equity of the merged company.

Explain the reasons for any difference that exists from the expected values of debt and equity if they do not merge.

10

Answer to Q. 5:

- (a) Synergy can be described as the '2 + 2 = 5' effect, whereby a group of two firms after a takeover of one of them by the other firm achieves combined results that reflect a rate of return that is better than what was being achieved by the same resources used in two separate operations before the takeover.

The main reasons why Synergy might exist are as follows:

- A. Operating economies
 - Economies of scale
 - Economies of scope
 - Management
 - Control over resources
- B. Financial synergies
 - Earnings stability
 - Liquidity
 - Tax factors
- C. Market position
 - Influence
 - Profile.

(b) Value of Sun Ltd's share:

To find the value of Sun Ltd's Equity Shares, we subtract debt of Rs 135 lakh from the total value –

	Recession	Slow growth	Rapid growth
Total value	126	165	225
Debt	135	135	135
Equity	(9)	30	90

This shows a negative value of equity in the recession scenario, which cannot happen because the shares have limited liability. So, we assume the shares are zero value and the debt has declined to Rs 126 lakh because of bankruptcy risk. The expected values can now be computed as:

	Recession	Slow growth	Rapid growth	Expected Value
Prob:	0.15	0.65	0.20	1.00
	Rs in lakh	Rs in lakh	Rs in lakh	Rs in lakh
Equity	0	30	90	37.5
Debt	126	135	135	133.65
Total	126	165	225	171.15

Value of Moon Ltd's share:

To find the value of Moon Ltd's shares we subtract debt of Rs 30 lakh from the total value –

Prob:	Recession 0.15 Rs in lakh	Slow growth 0.65 Rs in lakh	Rapid growth 0.20 Rs in lakh	Expected Value 1.00 Rs in Lakh
Equity	159	210	330	226.35
Debt	30	30	30	30
Total	189	240	360	256.35

Effect of merger:

When the companies merge, we add the economic values of equity and debt together. This means using the negative Rs 9 lakh value for Sun's equity in the recession scenario. Its debt will be restored to Rs 135 lakh because the bankruptcy risk will have disappeared by combination with a low geared company (Moon Ltd) due to the coinsurance effect. Value of the combined company will then be:

Prob:	Recession 0.15 Rs in lakh	Slow growth 0.65 Rs in lakh	Rapid growth 0.20 Rs in lakh	Expected value 1.00 Rs in lakh
Equity	150	240	420	262.50
Debt	165	165	165	165
Total	315	405	585	427.50

Summary:

Loss in equity value after combination

Gain in debt value after combination

Rs in lakh
 $Rs (262.50 - 37.50 - 226.35) = Rs 1.35,$

Rs in lakh
 $Rs(165.00 - 133.65 - 30.00) = Rs 1.35,$

whilst the total economic value of the business remains at Rs 427.50 lakh in the absence of synergy.

6 (a) Why do firms 'Manage Earnings'? How do firms manage earnings? 8

(b) ABC Consulting Ltd is a firm that specializes in offering management consulting services to software companies.

ABC Ltd reported operating income (EBIT) of Rs 102 lakh and net income of Rs 45 lakh in the most recent year. However, the firm's expenses include the cost of recruiting new consultants and the cost of training which amount to Rs 20 lakh. A consultant who joins ABC Consulting Ltd stays with the firm, on an average, for 4 years.

Recruitment and training expenses are amortizable over 4 years. Over the past 4 years they are:

Year	Trainings, Recruitment Expenses Rs in lakh
------	---

Current	20
-1	16
-2	15
-3	12
-4	10

- Assuming a linear amortization schedule (over 4 years) –
- Estimate :
- (i) The value of human capital asset and the amount of training and recruitment expenses amortization this year. 6
 - (ii) The adjustment to operating income. 2

Answer to Q. 6:

- (a) Firms generally manage earnings because they believe that they will be rewarded by markets for delivering earnings that are smoother and come in consistently above analyst estimates. Furthermore, there are firms where managerial compensation is still built around profit targets, and meeting these targets can lead to lucrative bonuses.

Techniques for managing earnings:

1. *Planning ahead*
Firms can plan investments and sale of assets to keep earnings rising smoothly
2. *Revenue recognition*
Firms have some discretion in determining revenues and their timing when to recognize them, as they can decide accounting estimates within the framework of prescribed accounting standards.
3. *Capitalize operating expenses*
Just as with revenue recognition, firms are given some discretion in whether they classify expenses as operating or capital expenses, especially for items like software, R & D.
4. *Use reserves*
Firms are allowed to build up reserves for doubtful debts, product returns, and other potential losses. Some firms are conservative in their estimates in good years, and use the excess reserves that they have built up during these years to smooth out earnings in other years.

(b) Year	Training and recruitment expenses (Rs in lakh)	Unamortized portion (Rs in lakh)	Amortization this year (Rs in lakh)
Current	20	(100%) 20	-
-1	16	(75%) 12	4
-2	15	(50%) 7.5	3.75
-3	12	(25%) 3	3
-4	10	0	2.50
		42.5	13.25

(i) The value of human capital asset is Rs 42.5 lakh and the amount of training and recruitment expenses amortization this year is Rs 13.25 lakh.

(ii) Adjusted operating income
 = Operating income + Training and recruitment expenses – Amortization of expenses this year
 = Rs 102 lakh + Rs 20 lakh – 13.25 lakh
 = Rs 108.75 lakh.

Question :

7. The following information pertains to M/s XY Ltd:

Earnings of the company	Rs 5,00,000
Dividend pay-out ratio	60%
Number of shares outstanding	1,00,000
Equity capitalization rate	12%
Rate of return on investment	15%

(a) What would be the market value per share as per Walter's model? 6

(b) What is the optimum dividend pay-out ratio according to Walter's model and the market value of company's share at that pay-out ratio? 10

Answer to Q. 7:

7 (a) Market value per share of M/s XY Ltd as per Walter's model :

Walter's model is given by :
 where $P = [D + (E - D)(r/K_e)]/K_e$
 P = market price per share
 D = dividend per share
 E = earnings per share
 r = rate of return on investment
 K_e = equity capitalization rate.

Now, putting the given values, we get $P = [3 + (5 - 3) \times 0.15/0.12] \div 0.12$
 = Rs 45.83

(ii)

According to Walter's model when the return on investment is more than the cost of equity capital, the price per share increases as the dividend pay out ratio decreases. Hence, the optimum dividend pay out ratio in this case is NIL.

So, at a pay out ratio of zero, the market value of the company's share will be $[0 + (5 - 0) \times 0.15/0.12] \div 0.12 = \text{Rs } 52.08$

Question:

8 (a) What are the methods of payment in mergers and amalgamations? 8

(b) What is the method of valuation of unlisted shares as per SEBI guidelines? 8

Answer to Q. 8:

(a) *Methods of payment in mergers and amalgamations* may take one or more of the following

Cash - Where one company purchases the shares or assets of another for cash, the shareholders of the latter company cease to have any interest in the combined business

Loan stock - The shareholders of the selling company exchange their equity investment in the company for a fixed interest investment in the other company.

Equity shares - The shareholders merely exchange their shares in one company for shares in another company. The extent to which it is beneficial for the shareholders of either company will depend upon the relative values of the shares.

Convertible loan stock - The shareholders in one company exchange their shares for convertible loan stock in another company. A selling shareholder exchange an equity investment for a fixed interest security which is convertible into an equity investment at some time in the future if she/he so desires.

(b)

SEBI guidelines for valuation of unlisted shares:

With a view to bringing about uniformity in calculation of net assets (NAVs) of mutual funds schemes, SEBI has, vide its circular (MFD/CIR/03/526/2002) dated 09 May 2002, issued guidelines for valuation of unlisted equity shares in consultation with the Association of Mutual Funds in India (AMFI). The guidelines also prescribe exercise of due diligence while making such investments and review of their performance so as to protect the interests of investors.

Methodology for valuation:

Unlisted equity shares of a company shall be valued "in good faith" on the basis of the valuation principles laid down below –

1. Take the lower of
 - (a) Net worth per share [when there are no outstanding warrants and options] which will consist of [share capital + free reserves (excluding revaluation reserves) - miscellaneous expenditure not written off / deferred revenue expenditure / intangible assets / accumulated losses] ÷ Number of paid up shares, and
 - (b) Net worth per share [when there are outstanding warrants and options] which will consist of [a (as computed above) + consideration on exercise of warrants/options received or receivable by the company] ÷ [Number of paid up shares + Number of shares that would be obtained on conversion/exercise of outstanding warrants and options]
2. Find the average capitalization rate (P/E ratio) for the industry based upon either BSE or NSE data (which should be followed consistently, and for any changes thereof it should be noted with proper justification). Thereupon this P/E ratio shall be discounted by 75% so that 25% of the said P/E ratio shall be taken as the capitalization rate. Earnings per share of the latest audited annual accounts will be considered for this purpose.
3. Find the average of the above two values – net worth value per share and the value per share based on P/E ratio. Discount this average value by 15% for illiquidity so as to arrive at the fair value per share.

The above methodology for valuation is subject to the following conditions:

- i. All calculations as aforesaid shall be based on audited accounts.
- ii. In case where the latest balance sheet of the company is not available within nine months from the close of the year, unless the accounting year is changed, the shares of such companies shall be valued at zero.
- iii. If the net worth of the company is negative, the share would be marked down to zero.
- iv. In case the EPS is negative, EPS value for that year shall be taken as zero for arriving at capitalized earning.
- v. In case an individual security accounts for more than 5% of the assets of the scheme, an independent valuer shall be appointed for the valuation of the said security. To determine if a security accounts for more than 5% of the total assets of the scheme, it should be valued in accordance with the procedure as mentioned above on the date of valuation.