

MAY 2010

FINAL (NEW COURSE)  
GROUP-II PAPER-5  
ADVANCED MANAGEMENT  
ACCOUNTING

Roll No.....

Total No. of Questions—6]

[Total No. of Printed Pages—10

Time Allowed—3 Hours

Maximum Marks—100

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Answers to questions are to be given only in English except in the case of candidates who have opted for Hindi medium. If a candidate who has not opted for Hindi medium, his answers in Hindi will not be valued.

Answer all questions.

Working notes should form part of the answer.

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1. (a) E Ltd. is engaged in the manufacturing of three products in its factory. 10  
The following budget estimates are prepared for 2009-10 :

	Products		
	A	B	C
Sales (Units)	10,000	25,000	20,000
Selling Price p.u. (Rs.)	40	75	85
Direct Materials p.u. (Rs.)	10	14	18
Direct wages p.u. @ Rs. 2 p.hr.	8	12	10
Variable overhead p.u. (Rs.)	8	9	10
Fixed overhead (Rs.) p.u.	16	18	20
Profit/Loss	- 2	22	27

After the finalisation of the above manufacturing schedule, it is observed that presently only 80% capacity being utilised by these three products. The production activities are made at the same platform and it may be

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interchangeable among products according to requirement. In order to improve the profitability of the company the following three proposals are put for consideration :

- (a) Discontinue product A and capacity released may be used for either product B or C or equally shared. The fixed cost of product A is avoidable. Expected changes in material cost and selling price subject to the utilisation of product A's capacity are as under :

Product B : Material cost increased by 10% and selling price reduced by 2%.

Product C : Material cost increased by 5% and selling price reduced by 5%.

- (b) Discontinue product A and divert the capacity so released and the idle capacity to produce a new product D for meeting export demand whose per unit cost data are as follows :

	Rs.
Selling Price	60
Direct material	28
Direct wages @ Rs. 3 p. hr.	12
Variable overheads	6
Fixed cost (Total)	1,05,500

- (c) Product A, B and C are continuously run and hire out the idle capacity fixing a price in such a way that the same rate of profit per direct labour hour is obtained in the original budget estimates.

Required :

- (i) Prepare a statement of profitability of products A, B and C in existing situation.
- (ii) Evaluate the above proposals independently and calculate the overall profitability of the company under each proposal.
- (iii) What proposal should be accepted, if the company wants to maximise its Profit ?

- (b) A Company is engaged in manufacturing two products A and B. Product A uses one unit of component X and two units of component Y. Product B uses two units of component X and one unit of component Y and two units of component Z. Component Z which is assembled in the factory uses one unit of component Y. 7

Components X and Y are purchased from the market. The company has prepared the following forecast of sales and inventory for the next year :

	Product A (Units)	Product B (Units)
Sales	80,000	1,50,000
Stock at the end of the year	10,000	20,000
Stock at the beginning of the year	30,000	50,000

The production of both the products and the assembling of the component Z will be spread out uniformly throughout the year. The company at present orders its inventory of X and Y in quantities equivalent to 3 months production. The company has compiled the following data related to the two components :

	X	Y
Price per unit (Rs.)	20	8
Order placing cost per order (Rs.)	1,500	1,500
Carrying cost per annum	20%	20%

Required :

- (i) Prepare a budget for production and requirements of components for the next year.
- (ii) Suggest the optimal order quantity of components X and Y.
- (c) Identify the characteristics movement such as regular, irregular, cyclical, seasonal, long-term trend, short-term etc. of time series in the following situations : 3
- (i) A factory delaying its production due to demolition of factory shed in earthquake.

- (ii) An era of depression in business.
- (iii) The country needs more and more food grains due to constant growth of population.
- (iv) Decline in death rate due to availability of proper health care facilities.
- (v) A continuous increase in demand of small cars.
- (vi) A demand of gold products is increasing during the festival time.

2. (a) AML Ltd. is engaged in production of three types of ice-cream products : 12  
 Coco, Strawberry and Vanilla. The company presently sells 50,000 units of Coco @ Rs. 25 per unit, Strawberry 20,000 @ Rs. 20 per unit and Vanilla 60,000 units @ Rs. 15 per unit. The demand is sensitive to selling price and it has been observed that every reduction of Re. 1 per unit in selling price, increases the demand for each product by 10% to the previous level. The company has the production capacity of 60,500 units of Coco, 24,200 units of Strawberry and 72,600 units of Vanilla. The company marks up 25% on cost of the product.

The Company management decides to apply ABC analysis. For this purpose it identifies four activities and the rates as follows :

<u>Activity</u>	<u>Cost Rate</u>
Ordering	Rs. 800 per purchase order
Delivery	Rs. 700 per delivery
Shelf stocking	Rs. 199 per hour
Customer support and assistance	Rs. 1.10 p.u. sold.

The other relevant information for the products are as follows :

	Coco	Strawberry	Vanilla
Direct Material p.u. (Rs.)	8	6	5
Direct Labour p.u. (Rs.)	5	4	3
No. of purchase orders	35	30	15
No. of deliveries	112	66	48
Shelf stocking hours	130	150	160

Under the traditional costing system, store support costs are charged @ 30% of prime cost. In ABC these costs are coming under customer support and assistance.

Required :

- (i) Calculate target cost for each product after a reduction of selling price required to achieve the sales equal to the production capacity.
- (ii) Calculate the total cost and unit cost of each product at the maximum level using traditional costing.
- (iii) Calculate the total cost and unit cost of each product at the maximum level using activity based costing.
- (iv) Compare the cost of each product calculated in (i) and (ii) with (iii) and comment on it.

(b) What are the essential requisites for the installation of Uniform costing system ? 4

3. (a) X Ltd. produces and sells a single product. Standard cost card per unit of the product is as follows : 12

	(Rs.)
Direct materials :	
A 10 kg @ Rs. 5 per kg	50.00
B 5 kg @ Rs. 6 per kg	30.00
Direct wages 5 hours @ Rs. 5 per hour	25.00
Variable production overheads 5 hours @ 12 per hour	60.00
Fixed production overheads	25.00
Total standard cost	190.00
Standard gross profit	35.00
Standard selling price	225.00

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A fixed production overhead has been absorbed on the expected annual output of 25,200 units produced evenly throughout the year. During the month of December, 2009, the following were the actual results for an actual production of 2,000 units :

	(Rs.)
Sales 2,000 units @ Rs. 225	<u>4,50,000</u>
Direct materials :     A 18,900 kg	99,225
B 10,750 kg	61,275
Direct Wages 10,500 hours (actually worked 10,300 hours)	50,400
Variable production overheads	1,15,000
Fixed production overheads	<u>56,600</u>
Total	<u>3,82,500</u>
Gross profit	<u>67,500</u>

The material price variance is extracted at the time of receipt of materials. Material purchase were A 20,000 kg. @ Rs. 5.25 per kg; B 11,500 kg @ Rs. 5.70 per kg.

Required :

- (i) Calculate all variances.
  - (ii) Prepare an operating statement showing Standard gross profit, Variances and Actual gross profit.
  - (iii) Explain the reason for the difference in actual gross profit given in the question and calculated in (ii) above.
- (b) What is Backflushing in JIT ? State the problems that must be addressed for the effective functioning of the system.

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4. (a) An electronics firm which has developed a new type of fire-alarm system has been asked to quote for a prospective contract. The customer requires separate price quotations for each of the following possible orders :

Order	Number of fire-alarm systems
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First	100
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Second	60
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Third	40
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The firm estimates the following cost per unit for the first order :

Direct Materials	Rs. 500
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Direct Labour	
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Deptt. A (Highly automatic)	20 hours at Rs. 10 per hour.
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Deptt. B (Skilled labour)	40 hours at Rs. 15 per hour.
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Variable overheads absorbed	20% of direct labour
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Fixed overheads absorbed	
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Deptt. A	Rs. 8 per hour
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Deptt. B	Rs. 5 per hour
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Determine a price per unit for each of the three orders, assuming the firm uses a mark up of 25% on total costs and allows for an 80% learning curve. Extract from 80% learning curve table :

X	1.0	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
Y (%)	100.0	91.7	89.5	87.6	86.1	84.4	83.0	81.5	80.0

X represents the cumulative total volume produced to date expressed as a multiple of the initial order.

Y is the learning curve factor, for a given X value, expressed as a percentage of the cost of the initial order.

- (b) What are the applications of incremental/differential costs ?

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5. (a) ABC Cooperative Bank receives and disburses different amount of cash in each month. The bank has an opening cash Balance of Rs. 15 crores in the first month. Pattern of receipts and disbursements from past data is as follows :

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Monthly Cash receipts		Monthly Cash disbursements	
Rs. in Crores	Probability	Rs. in Crores	Probability
30	0.20	33	0.15
42	0.40	60	0.20
36	0.25	39	0.40
99	0.15	57	0.25

Simulate the cash position over a period of 12 months.

Required :

- (i) Calculate probability that the ABC Cooperative Bank will fall short in payments.
- (ii) Calculate average monthly shortfall.
- (iii) If ABC Bank can get an overdraft facility of Rs. 45 crores from other Nationalized banks.

What is the probability that they will fall short in monthly payments ?

Use the following sequence (rowwise) of paired random numbers.

1778 4316 7435 3123 7244 4692 5158 6808 9358 5478 9654 0977

- (b) A small project is composed of seven activities, whose time estimates are listed below. Activities are identified by their beginning (i) and ending (j) note numbers :

Activity (i-j)	Estimated durations (in days)		
	Optimistic	Most likely	Pessimistic
1-2	2	2	14
1-3	2	8	14
1-4	4	4	16
2-5	2	2	2
3-5	4	10	28
4-6	4	10	16
5-6	6	12	30

(a) Draw the project network.

(b) Find the expected duration and variance for each activity. What is the expected project length ?

Given : Z	0.50	0.67	1.00	1.33	2.00
P	0.3085	0.2514	0.1587	0.0918	0.0228

(c) Brief the principles associated with synchronous manufacturing. 5

6. (a) X Ltd. supplies spare parts to an air craft company Y Ltd. The production capacity of X Ltd. facilitates production of any one spare part for a particular period of time. The following are the cost and other information for the production of the two different spare parts A and B :

Per unit	Part A	Part B
Alloy usage	1.6 kgs.	1.6 kgs.
Machine Time : Machine A	0.6 hrs.	0.25 hrs.
Machine Time : Machine B	0.5 hrs.	0.55 hrs.
Target Price (Rs.)	145	115

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Total hours available : Machine A 4,000 hours

Machine B 4,500 hours

Alloy available is 13,000 kgs. @ Rs. 12.50 per kg.

Variable overheads per machine hours :

Machine A : Rs. 80

Machine B : Rs. 100

You are required to identify the spare part which will optimise contribution at the offered price.

If Y Ltd. reduces target price by 10% and offers Rs. 60 per hour of unutilised machine hour, what will be the total contribution from the spare part identified above ?

- (b) What do you mean by Degeneracy in transportation problem ? How this can be solved ? 4
- (c) What is Price Discrimination ? Under what circumstances it is possible ? 4

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