

Test Series: February, 2016

MOCK TEST PAPER – 1

FINAL COURSE: GROUP – II

PAPER – 5: ADVANCED MANAGEMENT ACCOUNTING

Question No. 1 is compulsory

Answer any five questions from the remaining six questions

Time Allowed – 3 Hours

Maximum Marks – 100

1. (a) Y-Connections, China based firm, has just developed ultra-thintablet S-5 with few features like the ability to open two apps at the same time. This tablet cost Rs. 5,00,000 to develop; it has undergone extensive research and is ready for production. Currently, the firm is deciding on plant capacity, which could cost either Rs. 35,00,000 or Rs. 52,00,000. The additional outlay would allow the plant to increase capacity from 500 units to 750 units. The relevant data for the life cycle of the tablet at different capacity level are as under:

Expected Sales	500 units	750 units
Sale Price	Rs. 79,600 per unit	Rs. 69,600 per unit
Variable Selling Costs	10% of Selling Price	10% of Selling Price
Salvage Value - Plant	Rs. 6,25,000	Rs. 9,00,000
Profit Volume Ratio	40%	

Required

Advise Y-Connections, regarding the 'Optimal Plant Capacity' to install. The tablet's life cycle is two years.

Note: Ignore the time value of money.

(5 Marks)

- (b) Web Security Ltd. (WSL) is a leading IT security solutions and ISO 9001 certified company. The solutions are well integrated systems that simplify IT security management across the length and depth of devices and on multiple platforms. WSL has recently developed an Antivirus Software and company expects to have life cycle of less than one year. It was decided that it would be appropriate to adopt a market skimming pricing policy for the launch of the product. This Software is currently in the Introduction stage of its life cycle and is generating significant unit profits.

Required

Explain, with reasons, the changes, if any, to the unit selling price that could occur when the Software moves from the Introduction stage to Growth stage of its life cycle.

Also suggest necessary strategies at this stage. (5 Marks)

- (c) A process industry unit manufactures three joint products: A, B and C. C has no realisable value unless it undergoes further processing after the point of separation. The cost details of C are as follows:

Per Unit	
	Rs.
Upto Point of Separation	
Marginal Cost	30
Fixed Cost	20
After Point of Separation	
Marginal Cost	15
Fixed Cost	5

C can be sold at Rs. 37 per unit and no more.

Required

- (i) Would you recommend production of C?
(ii) Would your recommendation be different if A, B and C are not joint products?

(5 Marks)

- (d) The chief officer at manufacturing plant of Boeing 777-200LR aircraft observed that workers performing manufacturing operations at the plant showed signs of a definite learning pattern. He noted that most aircraft manufacturing tasks experienced what he called an 80 percent learning rate, meaning that workers need 20 percent fewer hours to make a part each time their cumulative experience making that part doubled. Thus, if the first part took 100 minutes, the second would require 80 minutes, the fourth would require 64 minutes, and so on.

Required

Calculate the time required for parts 41 to 60.

Note:

Learning coefficient is -0.322 for learning rate of 80%, $\log 2 = 0.30103$, $\log 3 = 0.47712$, $\log 5 = 0.69897$, Antilog of 1.484 = 30.48, Antilog of 1.4274 = 26.75 (5 Marks)

2. (a) Standard Telecom Ltd. is a leading cellular service provider having a global presence. It aims to be the most innovative and trusted telecom company in the world. To achieve this aim, it is constantly working on its overall functioning. It is trying to adopt best managements practices in the world. Following are some information related to the company's performance for a particular period:

Particulars	Current Year	Base Year	Target
Operating Ratio	60%	54%	Reduce it to 50%
Average Revenue per user	Rs. 225	Rs. 210	Increase it to Rs. 250
Unresolved Consumer Complaints	27,500	25,000	Reduce it by 20%
Customer Relationship Centres	280	200	Take the total to 250
Employee Coverage under Training Programme	10%	8%	At least 15%

Required

Evaluate the performance of the company using Balance Scorecard approach.

(8 Marks)

- (b) Given below is an iteration in a simplex table for a maximization objective linear programming product mix problem for products X_1 , X_2 and X_3 .

$C_j \rightarrow$		6	4	10	0	0	0	
	Basic Variable	Quantity	X_1	X_2	X_3	S_1	S_2	S_3
0	S_1	400	0	$4/3$	0	1	$-1/3$	0
6	X_1	400	1	$2/3$	2	0	$1/3$	0
0	S_3	400	0	$5/3$	0	0	$-2/3$	1
	Z_j	2,400	6	4	12	0	2	0
	$C_j - Z_j$		0	0	-2	0	-2	0

Answer the following questions:

- Is the above solution feasible?
- Perform one more iteration with X_2 entering the solution to get a solution with the same value for the objective function.
- Indicate the shadow prices.
- If customer is prepared to pay higher price for product X_3 then by how much should the price be increased so that the company's profit remains

unchanged?

- (v) From the given table, derive any one original constraint inequality with the coefficients of variables in their simplest whole number forms. (8 Marks)

3. (a) Natural Spices manufactures and distributes high-quality spices to gourmet food shops and top quality restaurants. Gourmet and high-end restaurants pride themselves on using the freshest, highest-quality ingredients.

Natural Spices has set up five state of the art plants for meeting the ever growing demand. The firm procures raw material directly from the centers of produce to maintain uniform taste and quality. The raw material is first cleaned, dried and tested with the help of special machines. It is then carefully grounded into the finished product passing through various stages and packaged at the firm's ultraclean factory before being dispatched to customers.

The following variances pertain to last week of operations, arose as a consequence of management's decision to lower prices to increase volume.

Sales Volume Variance	18,000 (F)
Sales Price Variance	14,000 (A)
Purchase Price Variance	10,000 (F)
Labour Efficiency Variance	11,200 (F)
Fixed Cost Expenditure Variance	4,400 (F)

Required

- (i) Identify the 'Critical Success Factors' for Natural Spices.
- (ii) Evaluate the management's decision with the 'Overall Corporate Strategy' and 'Critical Success Factors'. (6 Marks)
- (b) Eastern Company Ltd. has two Divisions namely Casnub Bogie Division (CBD) and Wagon Division (WD). CBD manufactures Casnub Bogies and WD manufactures BOBN type of Wagons. To manufacture a Wagon WD needs four Casnub Bogies. CBD is the only manufacturer of the Casnub Bogies and supplies both WD and outside customers. Details of CBD and WD for the coming financial year 2014-15 are as follows:

	CBD	WD
Fixed Costs (Rs.)	9,20,20,000	16,45,36,000
Variable Cost per unit (Rs.)	2,20,000	4,80,000*
Capacity per month (units)	320	12

* excluding transfer costs

Market research has indicated that the demands in the market for Eastern Company Ltd.'s products at different quotations are as follows-

For Casnub Bogies: Quotation price of Rs.3,20,000 no tender will be awarded, but demand will increase by 30 Casnub Bogies with every Rs.10,000 reduction in the unit quotation price below Rs.3,20,000.

For Wagons: Quotation price of Rs.17,10,000 no tender will be awarded, but the demand for Wagons will be increased by two Wagons with every Rs.50,000 reduction in the unit quotation price below Rs.17,10,000.

Required

- (i) Calculate the unit quotation price of the Wagon that will maximise Eastern Company Ltd.'s profit for the financial year 2014-15.
- (ii) Calculate the unit quotation price of the Wagon that is likely to emerge if the divisional managers of CBD and WD both set quotation prices calculated to maximise divisional profit from sales to outside customers and the transfer price is set at market selling (quotation) price.

[Note: If $P = a - bQ$ then $MR = a - 2bQ$] (10 Marks)

4. (a) Jaya-Surya Ltd. (JSL) manufactures and sells two products 'Jaya' and 'Surya'. Both Jaya and Surya use a regular machine while Surya uses another high-precision machine as well. The following information is available for the next quarter.

	Jaya	Surya
Selling Price per unit (Rs.)	1,500	2,000
Variable Manufacturing Cost per unit (Rs.)	900	1,600
Variable Marketing Cost per unit (Rs.)	250	150
Budgeted Allocation of Fixed Overhead Costs (Rs.)	18,00,000	85,00,000
Regular Machine Hours per unit	2.0	1.0

Further information is available as follows:

- JSL faces a capacity constraint of 60,000 hours on the regular machine for the next quarter and there is no constraint on the high precision machine for the next quarter.
- Out of Rs. 85,00,000 budgeted allocation of fixed overhead costs to product Surya, Rs.60,00,000 is payable for hiring the high precision machine. This cost is charged entirely to product Surya. The hiring agreement can be cancelled at any time without penalties.
- All other overhead costs are fixed and cannot be changed.

- A minimum quantity of 12,500 units per quarter of Jaya must be produced to fulfill a commitment to a customer.
- Any quantity of any product can be sold at the given prices.

Required

- (i) Calculate the product mix of Jaya and Surya which would maximise the relevant operating profit of JSL in the next quarter.
 - (ii) JSL can double the quarterly capacity of regular machine at a cost of Rs.28,00,000. Calculate the new product mix and the amount by which the relevant operating profit will increase. (12 Marks)
- (b) The Chennai Construction Company is bidding on a contract to install a line of microwave towers. It has identified, the expected duration of the critical path is 18 weeks and the sum of the variances of the activities on the critical path is 9 weeks.

Required

Calculate the probability that the project may be completed not earlier than 15 weeks and not later than 21 weeks. (4 Marks)

5. (a) Jigyasa India Ltd. (JIL) has 30 retail stores of uniform sizes 'Fruity & Sweety Retailers' across the country. Mainly three products namely 'Butter Jelly', 'Fruits & Nuts' and 'Icy Cool' are sold through these retail stores. JIL maintains stocks for all retail stores in a centralised warehouse. Goods are released from the warehouse to the retail stores as per requisition raised by the stores. Goods are transported to the stores through two types of vans i.e. normal and refrigerated. These vans are to be hired by the JIL.

Costs per month of JIL are as follows:

(Rs.)	
Warehouse Costs:	
Labour & Staff Costs	27,000
Refrigeration Costs	1,52,000
Material Handling Costs	28,000
Total	2,07,000
Head Office Cost:	
Salary & Wages to Head Office Staff	50,000
Office Administration Costs	1,27,000
Total	1,77,000
Retail Stores Costs:	
Labour Related Costs	33,000

Refrigeration Costs	1,09,000
Other Costs	47,000
Total	1,89,000

Average transportation cost of JIL per trip to any retail stores are as follows:

Normal Van	Rs.3,200
Refrigerated Van	Rs.4,900

The Chief Financial Manager asked his Finance managers to calculate profitability based on three products sold through Fruity & Sweety retail stores rather than traditional method of calculating profitability.

The following information regarding retail stores are gathered:

	Butter Jelly	Fruits & Nuts	Icy Cool
No. of Cartons per cubic metre (m ³)	42	28	40
No. of Items per cartons (units)	300	144	72
Sales per month (units)	18,000	4,608	1,152
Time in Warehouse (in months)	1	1.5	0.5
Time in Retail Stores (in months)	1	2	1
Selling Price per unit (Rs.)	84	42	26
Purchase Price per unit (Rs.)	76	34	22

Butter Jelly and Icy-Cool are required to be kept under refrigerated conditions.

Additional information:

Total Volume of All Goods Sold per month	40,000 m ³
Total Volume of Refrigerated Goods Sold per month	25,000 m ³
Carrying Volume of each van	64 m ³

Required

Calculate the Profit per unit using Direct Product Profitability (DPP) method.

(10 Marks)

(b) Explain following statement

- Assignment problem is special case of transportation problem; it can also be solved by transportation methods. (6 Marks)

6. (a) A cake vendor buys pieces of cake every morning at Rs.4.50 each by placing his order one day in advance (at the time of receiving his previous order) and sale them at Rs.7.00 each. Unsold cake can be sold next day at Rs.2.00 per piece and there after it should be treated as no value. The pattern for demand of cake is given below:

Fresh Cake:

Daily Sale	100	101	102	103	104	105	106	107	108	109	110
Probability	.01	.03	.04	.07	.09	.11	.15	.21	.18	.09	.02

One day old cake:

Daily Sale	0	1	2	3
Probability	.70	.20	.08	.02

Use the following set of random numbers:

Fresh Cake	37	73	14	17	24	35	29	37	33	68
One day old cake	17	28	69	38	50	57	82	44	89	60

The vendor adopts the following rule.

If there is no stock of cake with him at the end of previous day, he orders for 110 pieces otherwise he orders 100 or 105 pieces whichever is nearest actual fresh cake sale on the previous day.

Required

Starting with zero stock and a pending order of 105 pieces, simulate for 10 days and calculate vendor's profit. (8 Marks)

- (b) INZ Bank operated for years under the assumption that profitability can be increased by increasing Rupee volumes. But that has not been the case. Cost analysis has revealed the following:

Activity	Activity Cost (Rs.)	Activity Driver	Activity Capacity
Providing ATM Service	1,00,000	No. of Transactions	2,00,000
Computer Processing	10,00,000	No. of Transactions	25,00,000
Issuing Statements	8,00,000	No. of Statements	5,00,000
Customer Inquiries	3,60,000	Telephone Minutes	6,00,000

The following annual information on three products was also made available:

Activity Driver	Checking Accounts	Personal Loans	Gold Visa
Units of Product	30,000	5,000	10,000
ATM Transactions	1,80,000	0	20,000
Computer Transactions	20,00,000	2,00,000	3,00,000
Number of Statements	3,00,000	50,000	1,50,000
Telephone Minutes	3,50,000	90,000	1,60,000

Required

- (i) Calculate rates for each activity.
- (ii) Using the rates computed in requirement (i), calculate the cost of each product. (8 Marks)

7. Answer any four of the following questions:

- (a) Fiona is a news reporter and feature writer for an economic daily. Her assignment is to develop a feature article on 'Product Life-Cycle Costing', including interviews with the Chief Financial Officers (CFO) and Operating Managers. Fiona has been given a liberal budget for travel so as to research into company's history, operations, and market analysis for the firm she selects for the article.

Required

Fiona has asked you to recommend industries and firms that would be good candidates for the article. What would you advise? Explain your recommendations.

(4 Marks)

- (b) 6,000 pen drives of 2 GB to be sold in a perfectly competitive market to earn Rs. 1,06,000 profit, whereas in a monopoly market only 1,200 units are required to be sold to earn the same profit. The fixed costs for the period are Rs.74,000. The contribution per unit in the monopoly market is as high as three fourths its variable cost.

Required

Determine the targets selling price per unit under each market condition.

(4 Marks)

- (c) In a 3x4 transportation problem for minimizing costs, will the R_2C_1 cell (at the intersection of the 2nd row and 1st column) always figure in the initial solution by the North West Corner Rule? Why? (4 Marks)
- (d) What do you mean by DPP? What are its benefits? (4 Marks)

- (e) A company manufactures two products X and Y. Product X requires 8 hours to produce while Y requires 12 hours. In April, 2015, of 22 effective working days of 8 hours a day, 1,200 units of X and 800 units of Y were produced. The company employs 100 workers in production department to produce X and Y. The budgeted hours are 1,86,000 for the year.

Required

Calculate Capacity, Activity and Efficiency ratio and establish their relationship.

(4 Marks)