FINAL
GROUP-II PAPER-5
ADVANCED MANAGEMENT ACCOUNTING

Roll No. .....

MAY 2015

Total No. of Questions – 7

Total No. of Printed Pages – 15

Time Allowed – 3 Hours

Maximum Marks – 100

PTA

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 has not opted for Hindi Medium, his/her answers in Hindi will not be valued.

Question No. 1 is compulsory.

Answer any **five** questions out of the remaining **six** questions.

Working notes should form part of the answer.

No statistical or other table will be provided along with this question paper.

Candidates are not expected to copy situations given in theory questions into their answer books.

Wherever appropriate, suitable assumptions may be made and indicated in the answer by candidates.

Marks

1. (a) A company produces a single product 'Impex'. **5**

For an annual sales of 40,000 units of Impex, fixed overhead is ₹ 5,50,000. The variable cost per unit is ₹ 60. Capital employed in fixed assets is ₹ 8,00,000 and in current assets is 50% of net sales (i.e. sales less discount). The company sells goods at 20% discount on the maximum retail price (M.R.P.), which is ₹ X per unit. The company wants to earn a return of 25% before tax on capital employed in fixed and current assets.

Determine the value of X.

Marks

(b) Methods I, II, III and IV are available for one-to-one assignment to factories A, B and C. The time taken (in hours) for implementing these methods in the factories is tabulated below with the objective of minimization. 5

Factories → / ↓Methods	(Time Taken – hours)		
	A	B	C
I	35	25	28
II	23	32	25
III	25	42	21
IV	35	35	28

(i) Show the optimal assignment by circling the cells using the assignment algorithm (description of algorithm is not required). Which method will not be implemented ?

(ii) What is the minimum savings (in hours) required over the current given duration, for preferring the implementation of the method identified in (i) above ? When it so justifies, which method will it replace ? Why ?

Marks

(c) G is the transferring division and R, the receiving division in a company. R has a demand for 20% of G's production capacity which has to be first met as per the company's policy. State with reason, which division, G or R enjoys more advantage in each of the following independent situations, assuming no inventory build up. **5**

Sl. No.	G Transfers to R at Transfer Price equal to	G's Production level	External Demand	Division having more advantage	Reason
(i)	Full cost; No markup	60%	40%		
(ii)	Market Price	80%	60%		
(iii)	Marginal Cost	100%	80%		
(iv)	Market Price	100%	90%		

(Only the Sl. No. column and last two columns need to be written in the answer books).

Marks

(d) PQ Limited manufactures and sells a range of products. For one of its products, it makes 2000 units of a component which has the following budgeted manufacturing cost : 5

	Cost per unit (₹)
Direct materials	8,000
Direct Labour (specially skilled) (40 hours @ ₹ 150 per hour)	6,000
Variable overhead (40 hours @ ₹ 75 per hour)	3,000
Allocated Fixed overhead	10,000
Total production cost	**27,000**

Softech Limited has offered to supply the component at a guaranteed price of ₹ 25,000 per unit.

If the component is not manufactured by PQ Limited, all the direct labour thus released can be employed in increasing the production by 1600 units of an existing product K, which uses 50 of this type of direct labour hours per unit. K is sold for ₹ 45,000 per unit and has a marginal cost of production of ₹ 30,000 per unit and has sufficient market demand. The direct labour force cannot be retrenched or recruited for the next two production periods. From a financial perspective, using incremental cost analysis, would you advise PQ Ltd. to make or buy the component for the forthcoming production period ?

Marks

2. (a) Tricon Co. has prepared the following statement for the month of April 2015. **8**

Particulars	Budget Details	Static Budget	Actual
Units produced & Sold		4000	3200
		₹	₹
Direct Materials	3 kg p.u. @ ₹ 15 per kg.	1,80,000	1,55,000
Direct Labour	1 hr. p.u @ ₹ 36 per hour.	1,44,000	1,12,800
Variable Overhead	1 hr. p.u @ ₹ 22 per hour.	88,000	73,600
Fixed Overhead		90,000	84,000
Total Cost		5,02,000	4,25,400
Sales		6,00,000	4,48,000
Profit		**98,000**	**22,600**

During the month 10000 kg. of materials and 3100 direct labour hours were utilized.

(i) Prepare a flexible budget for the month.

(ii) Determine the material usage variance and the direct labour rate variance for the actual Vs the flexible budget.

PTA

Marks

(b) The following information is given relating to the simplex method of a linear program with the usual notations. 8

Objective function : $Z = x_1 + 5x_2 \quad \rightarrow (1)$

Constraints : $6x_1 + 8x_2 \leq 12 \quad \rightarrow (2)$

$5x_1 + 15x_2 \geq 10 \quad \rightarrow (3)$

$x_1, x_2 \geq 0 \quad \rightarrow (4)$

Let s_1 be the variable introduced to restate (2) as an equality and let s_2 and A_2 be variables to restate (3) as an equality.

If the objective is to maximize Z,

(i) What will be the coefficients of s_1, s_2 and A_2 in equation (1) and (3) restated as equality ?

(ii) Identify the slack and surplus variables.

(iii) Which variables will form part of the initial solution ? Why ?

(iv) If the objective is to minimize Z what will be your answer to (i) above?

Marks

3. (a) Apex Limited manufactures two products, P and Q, using the same production facility. The following information is available for a production period : 12

Particulars	Product P	Product Q
Demand (units)	2,20,000	1,75,000
Contribution (₹/unit)	10	12
Machine hours required per 100 units	15	25

P and Q can be produced only in batches of 100 units, and whatever is produced has to be sold or discarded. Inventory build-up is not possible from one production period to another. The total fixed costs for each level of production and directly attributable to P and Q are given below :

Level of output	Total Fixed Costs (₹)	
	Product P	Product Q
Upto 1,00,000 units	6,00,000	5,50,000
1,00,001 to 2,00,000 units	13,50,000	12,20,000
2,00,001 to 3,00,000 units (maximum possible level)	18,70,000	15,50,000

75000 machine hours are available in the production period.

(i) Calculate the quantities of P and Q in the best product mix to achieve the maximum profit and compute the maximum profit.

(ii) What will be the opportunity cost of meeting P's demand fully ?

Marks

(b) Rabi Ltd. is considering the discontinuance of Division C. The following information is given : **4**

(Figures - ₹)

Particulars	Divisions A & B	Division C	Total
Sales (Maximum achievable)	41,40,000	5,17,500	46,57,500
Less : Variable cost	20,70,000	2,76,000	23,46,000
Contribution	20,70,000	2,41,500	23,11,500
Less : Specific avoidable fixed cost	14,49,000	4,14,000	18,63,000
Divisional Income	6,21,000	(1,72,500)	4,48,500

The rates of variable costs are 90% of the normal rates due to the current volume of operation. There is adequate market demand.

For any lower volume of operation, the rates would go back to the normal rates.

Facilities released by discontinuing Division C cannot be used for any other purpose.

Evaluate the decision to discontinue Division C using relevant cost approach.

4. (a) Genex Limited produces 3 products X, Y and Z using three different machines M_1, M_2 and M_3. Each machine's capacity is limited to 6000 hours during the production period. The details given below are for the production period : **8**

Particulars	X	Y	Z
Selling price per unit	₹ 12,000	₹ 10,000	₹ 8,000
Variable cost per unit	₹ 8,000	₹ 6,800	₹ 6,000
Machine Hours required per unit :			
M_1	18	12	6
M_2	18	16	8
M_3	20	8	2
Expected Demand (units)	200	200	200

(i) Determine the bottleneck activity.

(ii) Allocate the machine hours on the basis of the bottleneck.

(iii) Determine the unused spare capacity, if any, of each machine.

Marks

(b) Four students A, B, C and D were asked to work out the initial solution of the following matrix showing unit transportation costs from plants to sales outlets, with a minimization objective and unbalanced quantities of supply and demand. A introduced a dummy row D on top (above S_1 position), while others introduced the dummy row D at the bottom (below S_3 position). A and B were asked to do the North West Corner Rule, while C did Least Cost Method and D did Vogel's method. **8**

Plants / Sales outlets	P_1	P_2	P_3	Demand
S_1	9	27	18	80
S_2	12	12	18	120
S_3	24	10	15	140
Supply	120	150	90	

Using the usual notation of cell reference (e.g. S_2P_3 refers to the cell at the intersection of the S_2 row and P_3 column), what would be the 3rd allocation step in the initial allocation by each student ?

You are advised to use the following format for your answers.

Student	Allocation Details at Step III		
	Cell Reference	Quantity Allocated (units)	Unit Cost at that cell
A			
B			
C			
D			

(Candidates are not expected to show a fair version of the transportation matrix showing the calculations.)

Marks

5. (a) Linex Limited manufactures three products P, Q and R which are similar in nature and are usually produced in production runs of 100 units. Product P and R require both machine hours and assembly hours, whereas product Q requires only machine hours. The overheads incurred by the company during the first quarter are as under : 8

	₹
Machine Department expenses	18,48,000
Assembly Department expenses	6,72,000
Setup costs	90,000
Stores receiving cost	1,20,000
Order processing and dispatch	1,80,000
Inspection and Quality control cost	36,000

The data related to the three products during the period are as under :

	P	Q	R
Units produced and sold	15000	12000	18000
Machine hours worked	30000 hrs	48000 hrs	54000 hrs
Assembly hours worked (direct labour hours)	15000 hrs	–	27000 hrs
Customers orders executed (in numbers)	1250	1000	1500
Number of requisitions raised on the stores.	40	30	50

Prepare a statement showing details of overhead costs allocated to each product type using activity based costing.

Marks

(b) A bakery bakes 100 cakes per day. The sale of cakes depends upon demand which has the following distribution : **8**

Sale of Cakes (Nos.)	Probability
97	0.10
98	0.15
99	0.20
100	0.35
102	0.15
103	0.05

There is no carry over of inventory.

The following details are given :

	₹
Variable Production cost per cake	14
Selling price per cake	18
Penalty attracted per unsold cake	3
Penalty attracted per unit of demand not met	1

Random Numbers to be used :

9, 98, 64, 98, 94, 01, 78, 10, 15, 19

(i) Estimate the profit/loss for the next ten days using the above random numbers and assuming 100 cakes are produced per day.

(ii) If the bakery decides to produce 97 cakes per day, will the profits as per (i) above increase or decrease ? Why ?

Marks

6. (a) A project comprised of 10 activities whose normal time and cost are given as follows : **8**

Activity	Normal Time (Days)	Normal Cost (₹)
1 – 2	3	800
2 – 3	3	100
2 – 4	7	900
2 – 5	9	1400
3 – 5	5	600
4 – 5	0	0
5 – 6	6	590
6 – 7	4	720
6 – 8	13	1490
7 – 8	10	1780

Indirect cost ₹ 115 per day.

(i) Draw the network.

(ii) List all the paths along with their corresponding durations and find the critical path.

(iii) When and at what cost will the project be completed ?

Marks

(b) The standard cost of a certain chemical mixture is as under : **8**

40% of Material A @ ₹ 30 per kg

60% of Material B @ ₹ 40 per kg

A standard loss of 10% of input is expected in production. The following actual cost data is given for the period.

350 kg Material – A at a cost of ₹ 25

400 kg Material – B at a cost of ₹ 45

Actual weight produced is 630 kg.

You are required to calculate the following variances raw material wise and indicate whether they are favourable (F) or adverse (A) :

(i) Cost variance

(ii) Price variance

(iii) Mix variance

(iv) Yield variance

PTA **Marks**

7. Answer any **four** out of the following **five** questions :

(a) Quality products can be determined by using a few of the dimensions of quality. Identify the following under the appropriate dimension : **4**

(i) Consistency of performance over time.

(ii) Primary product characteristics.

(iii) Exterior finish of a product.

(iv) Useful life of a product.

(b) In the context of a balanced scorecard, identify the perspectives of the following independent situations : **4**

Sl. No.	Organization	Target Parameter	Perspective
(i)	Courier Company	100% on-time delivery of priority dispatches	
(ii)	Tuition Centre	Set up class-on-internet facility for better reach of more number of students and absentees.	
(iii)	Computer Manufacturing Company	Set up service centres is all major cities for after sales support.	
(iv)	Government Taxation Department	Ensure Computer training to all officers above a certain rank to improve their capabilities.	

(Candidates need to only write the 1st and last columns in the answer books.)

Marks

(c) Classify the following business activities into primary and support activities under value chain analysis : 4

(i) Material Handling and Warehousing.

(ii) Purchasing of raw materials, supplies and other consumables.

(iii) Order processing and distribution.

(iv) Selection, placement and promotion of employees.

(d) What are the applications of Pareto Analysis in customer profitability analysis ? 4

(e) State whether and why the following are valid or not for learning curve theory : 4

(i) Learning curve theory applies to a division of a company which is fully automated.

(ii) Learning curve theory helps in setting standards.

(iii) Learning curve helps in pricing decisions.

(iv) Experienced workmen are more prone to learning effect.
