

GVM'S GGPR College of Commerce & Economics, Ponda Goa

M.Com Semester IV Examination, August 2020

COC 415 – Cost Management & Control

Duration: 2 Hours

Maximum Marks: 30

- Instructions:
1. *This paper consists of 2 questions carrying equal marks.*
 2. *Question No. 1 consist of 1 compulsory questions of 2 marks each.*
 3. *Answer any 4 Sub questions from question 2.*
 4. *Figures to the right indicate marks.*

1. Answer the following questions (1x2= 2Marks)

A) Discuss in short the problem of degeneracy in Linear Programming Problems.

2. Answer any 4 of the following questions (4x7= 2Marks)

A) What is Activity Based Costing? Enumerate the process of developing ABC system and its relative merits for manufacturing and non-manufacturing organisations.

B) States the areas in which the application of learning curve theory can be helpful for manufacturing organisations.

C) Enumerate different methods of obtaining initial basic feasible solution in transportation problems.

D) X Ltd company manufactures equipment's in its Gurgaon Plant in India for which the following information is available

Direct labour required is 2000 hours,

Learning curve is 80%,

Direct labour cost is Rs. 4/- per hour,

Direct material needed for 1 unit of equipment is Rs. 7,200/- and

Fixed overheads are Rs. 32,000/-

Using the learning curve concept calculate the expected average unit cost of making

a) 4 units of equipment's

b) 8 units of equipment's

After manufacturing 8 equipment's successfully, if a repeat order for manufacturing of another 8 equipment's is received, what lowest price can be stated for this repeat order?

E) A project to be taken by M/s Probus Ltd. which consist of the following activities whose time estimates are given against each as under.

Activity	Estimated Duration (Weeks)		
	Optimistic	Most Likely	Pessimistic
1-2	3	6	15
1-3	2	5	14
1-4	6	12	30
2-5	2	5	8
2-6	5	11	17
3-6	3	6	15
4-7	3	9	27
5-7	1	4	7
6-7	4	19	28

You are required to estimate the following based on the above furnished details of the project

- Draw the Project network.
- Estimate the project expected duration and variance of each activity.
- Determine the critical path and the expected project duration.
- What is the probability of completing the project in 38 weeks?
- What project duration will have 95% chance of completion (**Z 0.95 = 1.65**)
- The contract specifies a Rs. 5000 per week penalty clause for each week if the completion of the project extends beyond the maximum expected duration of the project. What is the probability that that the company has to pay a maximum penalty of Rs. 20,000?

F) A company has 3 factories and it is required to deliver products from these factories to three different sets of markets, the cost of transportation per unit, monthly capacities and monthly requirements are given below

Markets	Factories			Monthly Requirement
	1	2	3	
A	5	7	8	70
B	4	4	6	30
C	6	7	7	50
Monthly Capacity (Units)	65	42	43	-

Using Vogel's Approximation Method find the monthly production and distribution schedule that will minimize the cost for the company. **(10 Marks)**

G) A car hiring company has one car at each of the five depots A, B, C, D and E. a customer in each of the five towns V, W, X, Y and Z requires a car for their commute. The distance in Kilometres between depots (origin) and the towns (destinations) are given in the following table:

Towns ↓	Depots				
	A	B	C	D	E
V	3	5	10	15	8
W	4	7	15	18	8
X	8	12	20	20	12
Y	5	5	8	10	6
Z	10	10	15	25	10

Find out as to which car should be assigned to which customer so that the total distance travelled is the minimum. How much is the total travelled distance? **(10 Marks)**

Given:

Z (Areas 0-Z)	0.21	0.41	0.82	0.92
Probability	0.0832	0.1591	0.2939	0.3186
