

M.B.A. - I (CBCS Pattern) Sem-I
PCB1F06 - Quantitative Techniques

P. Pages : 2

Time : Three Hours



GUG/W/22/10679

Max. Marks : 70

- Notes : 1. Attempt **any five** questions.
2. All questions carry equal marks.

1. Calculate Mean deviation about Mean, Median & Mode & its coefficient from following data. **14**

Profit Less Than	5	10	15	20	25	30	35	40	45
No. of shops.	29	224	465	582	634	644	650	653	655

2. Calculate the coefficient of correlation and regression equations for the following data of marks obtained by 10 students in Q.T. & F. A. **14**

Marks in Q.T.	80	38	9	5	30	74	84	91	60	66
Marks in F.A.	36	06	17	14	25	10	32	00	03	02

3. Fit a straight line trend by method of Least square. What would be the earning for year 2022. **14**

Year	2013	2014	2015	2016	2017	2018	2019	2020
Earning ₹ Lacs	38	40	65	72	69	60	87	95

4. A certain out-put is manufactured of ₹ 80 and sold at ₹ 140 per unit. **14**
The product is such that if it is produced but not sold during a day's time it becomes worthless. The daily sales records in the past are as follows.

Sales per day	30	40	50	60	70
No. of days	24	24	36	24	12

Find the expected payoff and regret also find EVPI.

5. Five wagons are available at 5 stations. The mileages between various stations are given below. **14**

		Stations				
		1	2	3	4	5
Wagons	A	10	5	9	18	11
	B	13	9	6	12	14
	C	3	2	4	4	5
	D	18	9	12	17	15
	E	11	6	14	19	10

How should the wagons be transported so as to minimize the total mileage covered?

6. Solve the following transportation problem by using initial solution by VAM & test its optimality by MODI. **14**

From \ To	1	2	3	4	Supply
A	10	8	7	12	500
B	12	13	6	10	500
C	8	10	12	14	900
Demand	700	550	450	300	

7. Solve the following LPP using Graphical Method. 14
Maximum $z = 2x_1 + x_2$
Subject to,
 $x_1 + 2x_2 \leq 20$
 $x_1 + x_2 \leq 8$
 $x_1 - x_2 \leq 2$
 $x_1 - 2x_2 \leq 2$
 $x_1, x_2 \geq 0$
8. Explain the purpose and procedures of the simplex method. 14
9. Describe briefly the method that are available for solving Markov process problem. 14
10. Write short note on **any two**. 14
- a) Decision Tree.
 - b) Spearman's rank correlation coefficient.
 - c) Moving Averages.
 - d) Duality of LPP.
