

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

P. Pages : 2

Time : Three Hours



GUG/W/24/10679

Max. Marks : 70

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

1. Calculate the Mean, Median and Mode from the following data. 14

Age over in year	55	50	45	40	35	30	25	20
No. of Persons	52	78	144	259	363	449	494	525

2. Calculate the coefficient of correlation and Two lines of regression equations for the following data of marks obtained by 10 students in QT and A/c 14

Marks in QT	80	38	9	5	30	74	84	91	60	66
Marks in A/c	36	6	17	14	25	10	32	0	3	20

3. Fit a straight line trend by the least square method and tabulate the trend values and find the monthly increase in production & Forecast the production for year 2025 14

Year	2018	2019	2020	2021	2022	2023	2024
Production	38	40	65	72	69	60	87

4. Mr. Suresh Pandit has two investment policies A and B, but he can undertake only one at a time due to financial and other restriction. He can choose A first and then stop, if it A is successful then take B or vice versa. The probability of success of A is 0.7 while for B it is 0.4. Both the investment require an initial capital outlay of Rs. 10,000 and both return nothing if the venture is unsuccessful. Successful completion of A will return Rs. 20,000 (over cost) and the successful completion of B will return Rs 24,000 (over cost) Draw decision tree and determine the best strategy. 14

5. Solve the following assignment problem to minimize time 14

Job/Men	1	2	3	4	5
A	2	9	3	7	1
B	6	8	7	6	1
C	4	6	5	3	1
D	4	2	7	3	1
E	5	3	9	5	1

6. Solve the following Transportation problem by using VAM & test its optimality by MODI. 14

To/Form	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 by graphical method. 14

$$\text{Maximize } Z = 120X + 100Y$$

Subject to,

$$10X + 5Y \leq 80$$

$$6X + 6Y \leq 66$$

$$4X + 8Y \geq 24$$

$$5X + 6Y \leq 90$$

$$X, Y \geq 0$$

8. Explain the purpose and procedures of the simplex method. 14

9. Discuss Markov chain analysis with suitable example. 14

10. Write short note on **any two**. 14

- a) Objective & Limitation of Measure of Central Tendency.
- b) Decision making under certainty and uncertainty
- c) Uses of spearman's rank correlation coefficient.
- d) Merits and Demerits of mean deviation.
