

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

P. Pages : 2

Time : Three Hours



GUG/W/24/10679(S)

Max. Marks : 70

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

1. Share prices of two companies A Ltd. and B Ltd. were recorded as follows: **14**

A Ltd.	12	13	15	14	14	14	13	17
B Ltd.	113	114	113	115	117	114	112	114

Which company's share price are more consistent?

2. Construct two regression equations and find the correlation co-efficient for the following data and estimate the value of X when Y = 70 and Y when X = 650. **14**

X	100	200	300	400	500	600	700
Y	30	50	60	80	100	110	130

3. Fit a straight line trend by the least square method and tabulate the trend values and Forecast the Earning for year 2025. **14**

Year	2018	2019	2020	2021	2022	2023	2024
Earning	77	88	94	85	91	98	90

4. An Ice-cream retailer by ice-cream at cost Rs. 5 per cup and sale it for Rs. 8 per cup. Any remaining unsold at the end of the day can be dispose of at a salvage price of Rs. 2 per cup. Past sales have range between 15 to 18 cups per day. There is reason to believe that sales volume will lack on other magnitude in future. **14**

Market size	15	16	17	18
Probability	0.10	0.20	0.40	0.30

Calculate Expected Monetary value and EVPI.

5. Five different machines can do any of the 5 required jobs, with different profits resulting from each assignment as shown in table. Find out maximum profit possible through optimal assignment. **14**

Machine/Job	1	2	3	4	5
A	30	37	40	28	40
B	40	24	27	21	36
C	40	32	33	30	35
D	25	38	40	36	36
E	29	62	41	34	39

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

To/From	1	2	3	4	Supply
A	7	3	8	6	60
B	4	2	5	10	100
C	2	6	5	1	40
Demand	20	50	50	80	

7. Solve the following LPP by graphical method. 14

Minimum $Z = 3X + 5Y$

Subject to,

$$-3X + 4Y \leq 12$$

$$2X - Y \geq -2$$

$$2X + 3Y \geq 12$$

$$X \leq 4$$

$$Y \geq 2$$

$$X, Y \geq 0$$

8. Linear programming sometimes is defined as an infinite number of feasible solutions. 14

How such information is useful in decision making?

9. Explain briefly, how the seasonal element in a time series data is isolated and eliminated. 14

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

A) Markov chain.

B) Decision Tree.

C) North West corner Rule.

D) Concept of covariance.
