

Code No: **21BA1T5**

## **I MBA - I Semester Regular Examinations, APRIL -2022**

### **QUANTITATIVE ANALYSIS FOR BUSINESS DECISION**

Duration: 3 Hours

Max. Marks: 70

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- Note:
1. This question paper contains three Parts-A, Part-B and Part-C.
  2. Part-A contains 8 short answer questions. Answer any **Five** Questions. Each Question carries 2 Marks.
  3. Part-B contains 5 essay questions with an internal choice from each unit. Each Question carries 10 marks.
  4. Part-C contains one Case Study for 10 Marks.
  5. All parts of Question paper must be answered in one place
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#### **PART - A**

5 x 2 = 10 M

1. a) What are the objectives of measuring dispersion of a frequency distribution?
  - b) Recall the concepts of probability.
  - c) Outline the differences between small sample tests and large sample tests.
  - d) Recall the guidelines for formulation of LPP.
  - e) Deduct assignment problem and its characteristics.
  - f) What are the measures of dispersion.
  - g) Infer different small tests.
  - h) Build mixed strategy games.

## PART –B

5 x 10 = 50 M

### UNIT – I

2. Estimate arithmetic mean and median of the frequency distribution given below. Hence calculate the mode using the empirical relation between the three: 10 M

Height (in cms)	No. of students
130-134	5
135-139	15
140-144	28
145-149	24
150-154	17
155-159	10
160-164	1

OR

3. a) What is correlation? Explain the significance of correlation. 5 M
- b) Find Karl Pearson's coefficient of correlation from the following data. 5 M

X	39	65	62	90	82	75	25	98	36	78
Y	47	53	58	86	62	68	60	91	51	84

### UNIT – II

4. What are the different types of distributions? Explain the properties. 10 M

OR

5. The following table shows the distribution of number of faculty units produced in a single shift in a factory. The 10 M

data is for 400 shifts.

<b>No. of faculty</b>	0	1	2	3	4
<b>No. of shifts</b>	138	161	69	27	5

Formulate a poisson distribution to the data.

### UNIT-III

6. What is a hypothesis? Explain the types of hypothesis used in research. 10 M

OR

7. In a large city A, 20% of the random sample of 1000 school children had defective eye sight. In another large city B, 15% of a random sample of 2000 children had the same defect. Is this difference between two proportions significant? Determine 95% confidence limits for the difference in the population proportions. 10 M

### UNIT – IV

8. Use the Graphical method to solve the following LP problem and interpret. 10 M

$$\text{Minimize } Z = -X_1 + 2X_2$$

$$\text{Subject to the constraints } -X_1 + 3X_2 \leq 10$$

$$X_1 + X_2 \leq 6$$

$$X_1 - X_2 \leq 2 \text{ and } X_1, X_2 \geq 0$$

OR

9. Explain the steps in simplex method. 10 M

## UNIT – V

10. Find an optimum solution to the following transportation problem. 10 M

<b>Source/ Destination</b>	<b>D1</b>	<b>D2</b>	<b>D3</b>	<b>D4</b>	<b>Available</b>
<b>S1</b>	3	7	6	4	50
<b>S2</b>	2	4	3	2	20
<b>S3</b>	4	3	8	5	30
<b>Demand</b>	30	30	20	20	

OR

11. Solve the following assignment problem by Enumeration method. 10 M

Time ( in minutes)			
<b>Worker</b>	<b>Job 1</b>	<b>Job 2</b>	<b>Job 3</b>
<b>A</b>	4	2	7
<b>B</b>	8	5	3
<b>C</b>	4	5	6

## PART –C

10 M

### CASE STUDY

12. Estimate rank correlation between X and Y

X	68	64	75	50	64	80	75	40	55	64
Y	62	58	68	45	81	60	68	48	50	70