

Enrollment No: \_\_\_\_\_ Exam Seat No: \_\_\_\_\_

# C.U. SHAH UNIVERSITY

## Winter Examination-2018

Subject Name: Quantitative Techniques for Management

Subject Code: 5MS01QTM1

Branch: MBA

Semester: 1

Date: 26/11/2018

Time: 02:30 To 05:30

Marks: 70

### Instructions:

- (1) Use of Programmable calculator and any other electronic instrument is prohibited.
  - (2) Instructions written on main answer book are strictly to be obeyed.
  - (3) Draw neat diagrams and figures (if necessary) at right places.
  - (4) Assume suitable data if needed.
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### SECTION – I

- Q-1 Attempt the Following questions (07)**
- a. Define Statistics. 1
  - b. What do you mean by Descriptive Statistics? 1
  - c. Define Grouped Data. 1
  - d. Define Range. 1
  - e. Define Relative Frequency. 1
  - f. Define Median. 1
  - g. Define Variance. 1

- Q-2 Attempt all questions (14)**
- a. Write a note on different levels of Data Measurement. 07
  - b. The following data represent the costs (in '00 Rs.) of a sample of 30 courier mailings by a company. 07

3.67	2.75	9.15	5.11	3.32	2.09
1.83	10.94	1.93	3.89	7.2	2.78
6.72	7.8	5.47	4.15	3.55	3.53
3.34	4.95	5.42	8.64	4.84	4.1
5.1	6.45	4.65	1.97	2.84	3.21

Draw Stem-and-leaf plot of the data.

**OR**

- Q-2 Attempt all questions (14)**
- a. Write a note on uses of Quantitative Techniques in Management. 04



- b. Following table shows Run Scored by a cricketer in last 35 innings of T20. Construct a frequency distribution for the data using five class interval. Also calculate relative Frequency and cumulative frequency. **10**

13	5	30	26	33	38	7
49	39	27	23	42	50	0
14	15	45	27	2	28	42
47	6	46	46	15	6	16
12	36	32	5	10	4	23

**Q-3 Attempt all questions (14)**

- a. Compute the 35th percentile, the 55th percentile,  $Q_1$ ,  $Q_2$ , and  $Q_3$  for the following data. **07**

16, 28, 29, 13, 17, 20, 11, 34, 32, 27, 25, 30, 19, 18, 33

- b. Following data shows daily sales of a product A for a week. Find out Range, Mean Absolute Deviation, Variance and Standard Deviation. **07**

Day	Production (in '00 Units)
Monday	10
Tuesday	16
Wednesday	14
Thursday	12
Friday	18
Saturday	14

**OR**

- Q-3 a. Construct a histogram and a frequency polygon for the following data. 07**

<u>Class</u>	<u>Interval Frequency</u>
10–under 20	9
20–under 30	7
30–under 40	10
40–under 50	6
50–under 60	13
60–under 70	18
70–under 80	15

- b. Construct an ogive for the following data. **07**

<u>Class</u>	<u>Interval Frequency</u>
3–under 6	2
6–under 9	5
9–under 12	10
12–under 15	11
15–under 18	17
18–under 21	5



## SECTION – II

- Q-4 Attempt the Following questions (07)**
- a. Define Probability. 1
  - b. What do you mean by Experiment? 1
  - c. What do you mean by Joint Probability? 1
  - d. Define Correlation. 1
  - e. Define Regression Analysis. 1
  - f. Name any two methods of finding initial solution of transportation problem. 1
  - g. What do you mean by dummy source? 1

- Q-5 Attempt all questions (14)**
- a. Write note on different ways of assigning probability. 07
  - b. Following table shows data related to origin of the students and their chosen specialization in MBA 07

	East	West	North	South	Total
Marketing	24	10	08	14	56
Finance	30	06	22	12	70
HR	28	18	12	16	74
Total	82	34	42	42	200

Study the data and answer:

1. What is the probability that student is from North?
2. What is the probability that student is from HR or from East?
3. What is the probability that student is from Marketing and from South?
4. What is the probability that student is from Finance?

**OR**

- Q-5 a. A specialist in hospital administration stated that the number of employees in a hospital can be estimated by counting the number of beds in the hospital. A healthcare business researcher decided to develop a regression model in an attempt to predict the number of employees of a hospital by the number of beds. She surveyed 12 hospitals and obtained the following data. Develop the equation of regression line. 14**

Number of Beds	Number of Employees	Number of Beds	Number of Employees
23	69	50	138
29	95	54	178
29	102	64	156
35	118	66	184
42	126	76	176
46	125	78	225

- Q-6 Attempt all questions (14)**
- a. A company wishes to transport goods from its three sources to four destinations. Table below shows unit transportation cost matrix, availability and requirement. Help company to decide allocation is such a way that it results into least transportation cost. 14



	<b>D1</b>	<b>D2</b>	<b>D3</b>	<b>D4</b>	<b>Supply</b>
<b>S1</b>	38	60	100	20	14
<b>S2</b>	140	60	80	120	18
<b>S3</b>	80	16	140	40	36
<b>Demand</b>	10	16	14	28	

**OR**

**Q-6**

**Attempt all Questions**

- a.** A department has Five employees with Five Jobs to be performed. The time (in Hours) that each employee takes to perform each job is given below. Assign the jobs to employees, one per employee, so as to minimize the total man-hours. **14**

	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>
<b>A</b>	10	5	13	15	16
<b>B</b>	3	9	18	13	6
<b>C</b>	10	7	2	2	2
<b>D</b>	7	11	9	7	12
<b>E</b>	7	9	10	4	12

