

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

# C.U.SHAH UNIVERSITY

## Summer Examination-2019

**Subject Name : Quantitative Techniques for Management**  
**Subject Code :5MS01QTM1** **Branch: MBA**  
**Semester 1** **Date :12/03/2019** **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** **Define following:** **(07)**

- a. Statistics. **(01)**
- b. Sample. **(01)**
- c. Range. **(01)**
- d. Percentile. **(01)**
- e. Standard Deviation. **(01)**
- f. Joint Probability. **(01)**
- g. Sample Space. **(01)**

**Q-2** **Attempt all questions** **(14)**

- a. Write a note on Use of Statistics in Business. **(7)**
- b. Write a note on Stem and Lead Diagram. **(7)**

**OR**

**Q-2** **Attempt all questions** **(14)**

- a. Write a note on measures of Central Tendency. **(7)**
- b. Write a note on Methods of Assigning Probabilities. **(7)**

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

- a. V scored 84, 45, 30, 65, 85, 25, 55, 75 runs in last these many innings. Find average runs scored by V. Also find out variance and Standard Deviation. **(7)**
- b. The following data represent the expenditure on various items. Draw Pie Chart for the data. **(7)**

S.N.	Item	Expense (Rs.)	S.N.	Item	Expense (Rs.)
1	Cloth	1000	4	Education	2000
2	Mobile	5000	5	Misc.	1000
3	Ent.	1000	---	---	---

**OR**

**Q-3** a. Determine the value of the coefficient of Correlation,  $r$ , for the following data **(7)**  
X    20   6   8   12   14



- Y 411 13 8 6
- b. Determine the 30<sup>th</sup> percentile of the following ten numbers: 14, 12, 19, 23, 5, 13, 28, 27, 37 and 17 (7)

### SECTION – II

- Q-4 Define following: (07)**
- a. Correlation. (01)
  - b. Regression. (01)
  - c. Transportation Problem. (01)
  - d. Assignment Problem. (01)
  - e. Dummy Source. (01)
  - f. Trend. (01)
  - g. Irregular Variation. (01)

- Q-5 Attempt all questions (14)**
- A company has three factories S1, S2 and S3. They are supplying material to four warehouses D1, D2, D3 and D4. Capacity of factories is 7, 9 and 18 units respectively. The requirements at warehouses are 5, 8, 7 and 14 units respectively. The delivery costs from each factory to warehouse (in Rs.) are shown below. Suggest appropriate Transportation Schedule which results in to minimum cost. 14

Warehouse → Factory	D1	D2	D3	D4
S1	19	30	50	10
S2	70	30	40	60
S3	40	8	70	20

OR

- Q-5** Table below shows the data of 12 hospitals. Develop the equation of regression line showing relationship between Number of Beds and Number of Employees. 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 company has five employees with five jobs to be performed. The time (in hours) that each employee takes to perform each job is given below. How the jobs should be allocated, one per employee, so as to minimize the time? 14

Employee → Jobs ↓	I	II	III	IV	V
A	10	5	13	15	16
B	3	9	18	13	6
C	10	7	2	2	2



D	7	11	9	7	12
E	7	9	10	4	12

**OR**

**Q-6**

**Attempt all Questions**

**14**

A company wants to install four new machines M1, M2, M3 and M4 and it has five vacant places A, B, C, D and E. Because of limited space M2 cannot be placed at C and M3 cannot be placed at A. The cost of locating a machine at a place (in hundred rupees) is as follows. Find the optimum solution.

Machine	Place				
	A	B	C	D	E
M1	9	11	15	10	11
M2	12	9	-	10	9
M3	-	11	14	11	7
M4	14	8	12	7	8

