

SEAT No. _____

No. of Printed Pages : 2

[31 & A-25]

SARDAR PATEL UNIVERSITY**NOVEMBER-DECEMBER : 2017 EXAMINATION,****BBA (ITM) (4 Years) SEMESTER : III****SATURDAY, 18/11/2017****EVENING SESSION TIME : 2.00 P.M. TO 4.00 P.M.****SUBJECT CODE : UM03CBB101****QUANTITATIVE TECHNIQUES FOR MANAGEMENT – I (NC)****TOTAL MARKS : 60**

Q-1 (A) Define statistics and explain scope and limitations of it. Also explain interview method data collection. [08]

Q-1 (B) Prepare a frequency distribution from the following data in which one of the class is 120-130. [07]

110, 105, 126, 132, 125, 112, 135, 155, 125, 138, 136, 130, 120, 148, 138, 125, 119, 111, 154, 147, 165, 137, 140, 132, 150, 137, 142, 135, 125, 126, 110, 135, 145, 127, 144, 138, 126, 145, 159, 153, 127, 143, 136, 149, 136.

OR

Q-1 (A) Distinguish : Primary data and Secondary data. Also explain questionnaire method of data collection. [08]

Q-1 (B) Prepare a frequency distribution from the following data in which one of the class is 60-70. [07]

36, 24, 40, 25, 42, 45, 43, 55, 51, 46, 28, 18, 05, 26, 17, 09, 13, 25, 36, 44, 41, 43, 38, 26, 32, 59, 49, 53, 27, 13, 01, 43, 33, 39, 73, 36, 35, 33, 63, 46, 11, 60, 50, 19, 58, 37, 06, 51, 19, 29, 56, 14, 18, 39, 04, 44, 55, 51, 46, 65.

Q-2 (A) If median of the following data is 50 and total frequency is 100, then find missing frequency and hence obtain mean and mode. [08]

Class	0-20	20-40	40-60	60-80	80-100
f	14	?	27	?	15

Q-2 (B) From the following shares given below which share is more stable, why? [07]

X	55	54	52	53	56	58	52	50	51	49
Y	108	107	105	105	106	107	104	103	104	101

OR

Q-2 (A) For the following frequency distribution find range, quartile deviation and standard deviation. [08]

Class	80-90	90-100	100-110	110-120	120-130	130-140	140-150	150-160	160-170
f	6	18	78	80	100	72	30	10	6

Q-2 (B) Find mean, median and mode of first ten natural numbers. [07]

Q-3 (A) Define correlation and find correlation co-efficient for the following data. [08]

X	16	12	18	4	3	10	5	12
Y	87	88	89	68	78	80	75	83

(P.T.O.)

- Q-3 (B) The sum of squares of differences in ranks for two variables is 33, and the coefficient of rank correlation is 0.8. Find the number of pairs of observations. [07]

OR

- Q-3 (A) Two judges have given ranks to 10 participants for their beauty. Find the rank correlation coefficient. [08]

Judge 1	3	5	8	4	7	10	2	1	6	9
Judge 2	6	4	9	8	1	2	3	10	5	7

- Q-3 (B) Explain types of correlation and find correlation coefficient for the following data. [07]
 $n = 9$, $\sum x = 45$, $\sum y = 108$, $\sum x^2 = 285$, $\sum y^2 = 1356$, $\sum xy = 597$

- Q-4 (A) Write the uses of Linear programming problem and solve the following LPP by graphical method. [08]

$$\text{Max } Z = 4x + 5y$$

Subject to

$$3x + 6y \leq 2100$$

$$6x + 5y \leq 2100$$

$$x, y \geq 0$$

- Q-4 (B) Use the simplex method to solve the following LPP. [07]

$$\text{Max } Z = 3x_1 + 2x_2$$

$$\text{s.t. } x_1 + x_2 \leq 4$$

$$x_1 - x_2 \leq 2$$

$$x_1, x_2 \geq 0$$

OR

- Q-4 (A) Define the terms: [08]

(1) Objective function (2) Constraints (3) Feasible solution (4) Slack variable

(5) Surplus variable

Also write the meaning, assumptions and limitation of linear programming problem.

- Q-4 (B) Solve the following LPP by graphical method. [07]

$$\text{Max } Z = 20x + 10y$$

$$\text{S.t. } 3x + y \geq 30$$

$$x + 2y \leq 40$$

$$4x + 3y \leq 60$$

$$x, y \geq 0$$

—————X—————