Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY MAM – SEMESTER – 2 • EXAMINATION – WINTER - 2016

Subject Code: 4120503 Date: 19/11/2016

Subject Name: Business Statistics

Time: 10:30 am to 1:30 pm Total Marks: 70

Instructions:

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.
- Q.1 (a) Define statistics and explain with illustrations, five uses of statistics in business
 - **(b)** Calculate average daily wages from the following data:

Daily wage (in Rs.)	60	80	100	120	160	180	200
No. of persons	5	8	12	22	10	7	6

- Q.2 (a) State briefly, giving reasons, and the kind of diagram you consider most appropriate for use with each of the following classes of statistical data.
 - (i) Number of children per family in a large town.
 - (ii) Monthly rainfall for a period of three years.
 - (iii) Monthly output of steel for one year according to the principal grades of quality
 - (b) Compute the S.D. of household size from the following frequency distribution of 500 households covered in a sample survey:

Household size	1	2	3	4	5	6	7	8	9
No. of households	92	49	52	82	102	60	35	24	4

OR

(b) The value of median for the following series is determined:

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Income(Rs.)	1200	1800	5000	2500	3000	1600	3500	
No. of	12	16	2	10	3	15	7	
person	12	10	2	10	3	13	,	

- Q.3 (a) Explain the following terms:
 - 1) Random experiment
 - 2) Complementary event
 - 3) Mutually exclusive events
 - (b) If P(A) = 1/3, P(B') = 1/4 and $P(A \cap B) = 1/6$, find $P(A \cup B)$, $P(A' \cap B')$ and $P(A' \mid B')$.

OR

- Q.3 (a) Define a discrete random variable, its mathematical expectation and properties 07 of expected value.
 - (b) There are 2 white and 4 black balls in a box. A person takes 3 balls at random from the box. If he receives Rs. 10 for each white ball and receives Rs. 5 for each black ball, find the expected value of the amount received by him.

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Q.4	(a)	Calculate the	e quartile	deviation	on and its	s coeffici	ent from	the follo	wing da	ta:	07
		Class interval	10-15	15-20	20-25	25-30	30-40	40-50	50-60	60-70	
		frequency	4	12	16	22	10	8	6	4	
	(b)	What is co	rrelation	? Explai	n scatter	diagram	method.				07

Q.4 (a) The sum of squares of difference in ranks for two variables is 33, and the coefficient of rank correlation is 0.8. find the number of pairs of observation.

(b) Find the equations of regression lines from the following data and also estimate y for x = 1

X:	3	2	-1	6	4	-2	5	7
Y:	5	13	12	-1	2	20	0	-3

Q.5 (a) Write a note on: Non Probability Sampling Methods.
(b) The average height of a group of soldiers is 68.22" and the variance of height is 10.89. out of 1000 soldiers how many soldiers do you expect to be at least 6

OR

Q.5 (a) State the properties and uses of normal distribution. 07

(b) The probability distribution of demand of a commodity is given below:

feet tall!

Demand x:	5	6	7	8	9	10
Probability p(x)	0.05	0.1	0.3	0.4	0.1.	0.05

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