CODE: 17CE00104

MBA I Year I Semester Regular Examinations, December 2017

BUSINESS STATISTICS

Time: 3 hours Max Marks: 60

PART-A

Answer all **five** units (05 × 10 = 50 Marks)

UNIT-I

1. i) What are the various measures of central tendency? Explain the applications of these measures in business decision making.

ii) Calculate the inter quartile range, quartile deviation and coefficient of quartile deviation:

X:	2	3	6	8	10	13	16	19	21	23	26

OR

2. Find the standard deviation for the following data

Age(X)	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
f	15	15	23	22	25	10	5	10

UNIT-II

3. Eight students have obtained the following marks in economics and accountancy. Calculate the coefficient of rank correlation.

X(Accountancy)	25	30	38	22	50	70	30	90
Y(Economics)	50	40	60	40	30	20	40	70

OR

4. i)What are regression lines? Explain the properties of regression coefficient.

ii) Explain the properties of correlation coefficient.

UNIT-III

5. A bag contains 5 red and 3 black balls and a second bag contains 4 red and 5 black balls.

a) If one ball is selected at random from each bag , what is the probability that both of them are of the same colour?

b) If a bag is selected at random and 2 balls are drawn from it , what is the probability that they are of i) same colour ii) different colours?

OR

6. The following mistakes per page were observed in a book:

No. Of mistakes per page:	0	1	2	3
Frequency:	211	90	19	5

Fit a Poisson distribution to find the theoretical frequencies.

Continued in page 2

CODE: 17CE00104

UNIT-IV

7. The mean life of a random sample of 10 light bulbs was found to be 1456 hours with a standard deviation of 423 hours. A second sample of 17 bulbs chosen at random from a different batch showed a mean life of 1280 hours with a standard deviation of 398 hours. Is there a significant difference between the mean lives of the two batches?

OR

8. i) Explain the procedure for the testing of hypothesis.

ii) Two salesmen A and B are working in a certain district .From a sample survey the following results were obtained:

	Salesman A	Salesman B
No.of sales	20	18
Average sales(inRs.)	170	205
Standard deviation (inRs.)	20	25

State whether there is any significant difference in the average sales between the two salesmen.

UNIT-V

9. A tea company appoints 4 salesmen A,B,C,D and observes their sales in three seasons – summer, winter and monsoon.

Seasons	**Salesmen**				**Seasons**
	A	**B**	**C**	**D**	**Total**
Summer	36	36	21	35	128
Winter	28	29	31	32	120
Monsoon	26	28	29	29	112
Salesmen's totals	**90**	**93**	**81**	**96**	**360**

i) Do the salesmen significantly differ in performance?

ii) IS there a significant difference between the seasons?

OR

10. 200 digits are chosen at random from a set of tables. The frequencies of the digits are as follows:

Digit	0	1	2	3	4	5	6	7	8	9
Frequency	18	19	23	21	16	25	22	20	21	15

Use chi square test to assess the correctness of the hypothesis that the digits were distributed in equal numbers in the tables from which they were chosen.

PART-B

Compulsory Question. (01 × 10 = 10 Marks)

11. Case Study:

In an experiment on immunization of cattle from tuberculosis the following results were obtained:

	Affected	Not Affected
Inoculated	12	26
Not inoculated	16	6

Calculate chi square and discuss the effect of vaccine in controlling susceptibility to tuberculosis.(5% value of chi square for one degree of freedom =3.84)

*****