B. B. A. Sem. II
ST -205 - Business Statistics
MAY -2016

Time:- $2\frac{1}{2}$ Hours

Marks:70

Instructions:

1. There are FIVE compulsory Questions in this paper. Each question carries 14 marks.
2. Statistical tables & Graph Papers will be provided on request.
3. Use of scientific calculator is allowed.

Q-1 (a) Define the following terms.　　　　　　　　　　　　　　　　　　6
i. Arithmetic Mean ii. Median iii. Standard deviation

(b) Find Mean, Mean deviation, standard deviation, quartiles Q_3 from the following data.　　8

Number of days of Students absent	0 - 4	4 - 8	8 - 12	12 - 16	16 - 20	20 - 24
Number of Students	5	50	100	60	20	15

OR

Q-1 (a) Define the following terms.　　　　　　　　　　　　　　　　　　6
i. Weighted Mean ii. Mode iii. Coefficient of variation

(b) From the following data compute Variance, quartile Q_1, Deciles D_7, Percentile P_{79}.　　8

Marks	No. of Students
0-10	6
10-20	5
20-30	8
30-40	15
40-50	7
50-60	6
60-70	3

Q-2 (a) Define correlation coefficient. State its important properties.　　5

(b) The following data give the ages and blood pressures of woman:　　9

Age (x)	56	42	36	47	49	42	60	72	63
Blood Press.(y)	147	125	118	128	145	140	155	160	149

i. Determine the line of regression of Y on X.
ii. Find the correlation coefficient between X and Y.
iii. Estimate the blood pressure of woman whose age is 45 years.

OR

Q-2 (a) Distinguish between Correlation and Regression.　　6

(b) The midterm and final exam scores of 10 students in a Statistics course are tabulated as below: 8

Midterm	70	74	80	84	80	67	70	64	74	82
Final	87	79	88	98	96	73	83	79	91	94

Compute the Karl- Pearson's coefficient of linear correlation(r) between midterm and final examination performances.

Q-3 (a) Define the following Terms: 8
   i) Sample space   ii) Mutually Exclusive Event
   iii) Equally Likely Event iv) Favourable Event

(b) Write Axioms of probability and solve the following problem.   6

The chance of an accident occur in a factory is 10 in 50 in Mumbai,10 in 60 in Pune and 10 in 120 in Nagpur . Find the chance that an accident may happen in (i) Atleast one of the cities (ii) All these cities.

OR

Q-3 (a) Define the following terms.   8
   i) Event   ii) Exhaustive event
   iii) Independent Event   iv) Mathematical Expectation

(b) A typist claim on an average one mistake in each page. One page drawn at random from his typed pages. If his claim is true ,find the probability of getting.Greater than 2 mistake ii. at the most 3 mistake in a page.   6

Q-4 (a) Define Poisson distribution. State its application.   6

(b) The mean I. Q.(Intelligent Quotient) of a large number of children of age 14 was 100 and the standard deviation of their I.Q.'s was 16. Assuming that the distribution was normal, find   8
i.The percentage of children having I.Q. under 80.
ii.The percentage of children having I.Q. atleast 108.

OR

Q-4 (a) Define normal distribution. State its important properties.   8

(b) In a computer Test there are 6 objective questions and 3 alternative are given for each question and only one of them is correct. A candidate does not know the correct answer of any of the questions and hence he ticks any one of the alternatively randomly. Find the probability of getting   6
   i). All correct answers ii). At least 4 correct answers.

Q-5 (a) Define the following Terms: 8
   i). Statistics ii). Hypothesis
   iii).Type I error iv).Level of significance

(b) Write difference between sample study and population study.   6

OR

Q-5 (a) Define the following Terms: 8
   i). Parameter ii). Null hypothesis
   iii). Sample iv). Type II error

(b) State advantage and disadvantage of sample survey.   6