

B.Sc.-M.Sc. Integrated Program
Semester-I Examination, 2021
Paper Title: Basics of Computer Science and Statistics
Paper Code: BCH-CC-01
Section: STATISTICS

Time: 90 min

Max Marks: 37

Attempt all questions. Use only A4 sheets. All parts of a question must be attempted in continuation. Start answer of a fresh question on a new page. Cite examples and draw labelled diagrams wherever necessary.

Q.1 State whether TRUE or FALSE for the following (7x1)

- a. Regression analysis is to study the degree of relationship between the variables
- b. If two quantities vary in such a way that movements in one are not accompanied by movements in the other, these quantities are correlated.
- c. The Hypothesis is TRUE but our test reject it is called type II error
- d. If the random variable X is discrete one, the probability function $P(X)$ is called the probability density function
- e. Both the regression coefficients have different signs.
- f. Quantitative classification refers to the classification of data according to some attribute or quality.
- g. The objective of F test is to discover whether the two independent estimates of population variance differ significantly.

Q.2 a) From the following data compute Arithmetic mean and Median (2X4)

Marks	: 0-10	10-20	20-30	30-40	40-50	50-60
No. of Stud.:	5	10	25	30	20	10

b) Calculate standard deviation from the data given below

X :	10	15	25	35	50	20	5
F :	3	7	22	60	85	32	8

Q.3 a) What do you mean by the term 'probability', State the Addition Theorem and Multiplication theorems of the probability. (2X3.5)

b) Making use of the data summarised below calculate the coefficient of correlation.

X :	10	6	9	10	12	13	11	9
Y :	9	4	6	9	11	13	8	4

Q.4 (a) Explain ANY TWO of the following in brief (2X4=8)

- i) Binomial Distribution
- ii) Normal Distribution
- iii) Poisson Distribution

- b) A certain stimulus is administered to each of 12 patients resulted in the following change in blood pressure. (1X7)

5, 2, 8, -1, 3, 0, -2, 1, 5, 0, 4, 6

Can it be concluded that stimulus will in general be accompanied by an increase in blood pressure. (Given $t_{0.05}(11) = 2.201$)
