

2021
B.A./B.Sc.
First Semester
 CORE – 1
STATISTICS
Course Code: STC 1.11
 (Descriptive Statistics & Probability Theory)

PART-B
 Total Mark: 30

Answer the following questions.

1. What is meant by tabulation? Prepare a blank table showing the particulars relating to students of a college having three streams viz. Science, Arts and Commerce classified according to their age, sex faculty and three important religions. 2+4=6
 2. What do you mean by measures of central tendency? Mention different types of measures of central tendency. Describe why arithmetic mean is regarded as the best measures of central tendency. 1 + 2 + 3 = 6
 3. Define measures of dispersion. Show that standard deviation is the least root mean square deviation. Mention any two properties of standard deviation. 1 + 2 + 3 = 6
 4. (a) Define axiomatic definition of probability. 1
 (b) If A and B are two events, then prove that: $P(AB) \leq P(A) \leq P(A \cup B) \leq P(A + B)$. 3
 (c) State the Bayes' theorem of probability. 2
 5. (a) State probability mass function (p.m.f.) and probability density function (p.d.f.). 2
 (b) The p.d.f of a continuous distribution is $f(x) = y_0(x - x^2)$; $0 \leq x \leq 1$. Find the value of y_0 and the distribution function. 4
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