R-16

Code:3111

Faculty of Sciences

B.Sc (Statistics) I-Year, CBCS-I Semester Examinations 2018-19

PAPER-I: DESCRIPTIVE STATISTICS AND PROBABILITY

Time: 3 Hours Max Marks: 80

Section-A

I. Answer any five of the following questions (5x4=20 Marks)

1. Explain the difference between the primary data and secondary data.
2. Explain the Empirical Relation between the measures of central Tendencies.
3. Define axiomatic and statistical probability.
4. Explain the concept of conditional probability.
5. Define random variable and its Types with suitable examples.
6. Define distribution function and its properties.
7. Define co-variance and find COV $(ax + b, ay + b)$ where a and b are constants.
8. Define characteristic function and state its properties.

Section-B

II. Answer the following questions (4x15=60 Marks)

9. (a) Define moments. Explain the relation between Central and Non-central moments.

(OR)

(b) For a distribution mean is 10, variance is $16, \gamma_1 = 1 \; and \; \beta_2 = 4$ then find the moments about origin.

10.(a) Define mathematical probability state and prove baye's theorem.

(OR)

(b) The probability of X, Y and Z becoming managers are given by 4/9, 2/9 and 1/3. The probability that the bonus scheme will be introduced if X, Y and Z Becomes managers are given by 3/10, ½ and 4/5 respectively. If the bonus Scheme has been introduced then what is the probability that manager Appointed was 'X'.

11.(a) Define probability mass function and probability density function. Joint marginal and conditional distributions.

(OR)

(b) X is a random variable has the following probability function

$f(x) = kx(1-x) \; \forall \; 0 \leq x \leq 1,$

$= 0$ elsewhere

then (i) find the value of 'k' (ii) find the value of 'b' if $P(x \leq b) = P(x > b)$

12.(a) Define moment generating function and explain its limitations and Properties.

(OR)

(b) State and prove chebyshev's inequality.

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