ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

WORKSHEET-7

SUBJECT – STATISTICS

Term : 1st

Topic – Random variable and Expectation **Class: XII**

Full Marks: 15 **Date:15.05.2020**

Q1. Select the correct alternative of the following questions.

i) The values of a random variable are always positive real numbers.

a) positive real numbers. b) negative real numbers.

c) zero d) none of these

ii) Expectation of a negative random variable is

a) positive b) negative c)zero d)) none of these

iii) Standard deviation of a negative random variable is

a) positive. b) negative c) zero d)) none of these

iv) If expectation of a random variable is zero, each value of the random variable must be

a) positive. b) negative c) zero d)) none of these

v) If all values of a random variable are equal, then the variance will also be equal to

a) that value. b) one c) zero d)) none of these

vi) All odd-ordered central moments are zero for a distribution which is

a) Positively skewed b) negatively skewed c)symmetric d) none of these

vii) Expectation of a discrete random variable assuming integral values must be

b) Integer b) non integer c) rational number d) none of these

viii) For a random variable X, the first order central moment is always

a) 0 b) -1 c) 1 d) none of these

ix) For a symmetrically distributed random variable X, $P(X \leq mode) * P(X \geq mode)$, * is

a) + b) = c) ≠ d) none of these

x) If the observations of a random variable X be the first n natural numbers with same probability, the expectation of the random variable is

a) n b) n+1 c) $\frac{n+1}{2}$ d) none of these

xi) If X and Y be two independent random variables with variances are 9 and 16 respectively, then, V(X-Y) is

a) 0 b) 5 c) 4 d) none of these

xii) If V(X) = 4, then V(3 – 5X) is

a) 100 b) 125 c) 0 d) none of these

xiii) A random variable X has two values 0 and 1, with P(x=1) = $\frac{1}{3}$, then E(X) is

a) $\frac{1}{3}$ b) $\frac{2}{3}$ c) 1 d) none of these

xiv) The variance of a standard random variable is

a) **0** b)1 c) 2 d)none of these

xv) The mean of a standard random variable is

a) 0 b)1 c) 2 d)none of these

- **Prepared by**
Sanjay Bhattacharya