



ST. LAWRENCE HIGH SCHOOL
A JESUIT CHRISTIAN MINORITY INSTITUTION



SOLUTION OF WORKSHEET-13

SUBJECT - STATISTICS

Term : 1st

Topic - BINOMIAL DISTRIBUTION

Class: XII

Full Marks: 15

Date:11.06.2020

Q1. Select the correct alternative of the following questions.

- (i) The expectation in Binomial distribution $(3n, \frac{1}{3})$ is
a) **n** b) $n(1-p)$ c) $p(1-p)$ d) none of these
- (ii) The variance in Binomial distribution $(8, \frac{1}{2})$ is
b) 1.20 **b) 2** c) 2.25 d) none of these
- (iii) For a binomial distribution if mean is less than its variance, then p is equal to
a) 0 b) 1 c) either 0 or 1 **d) none of these**
- (iv) The binomial distribution $(n, \frac{p}{2})$ is leptokurtic if and only if
a) $p = 1$ b) $p > 1$ c) $p < 1$ **d) none of these**
- (v) In a Bin $(n, \frac{1}{2})$, $P(X = 0 \cup X = n)$
a) $\frac{1}{2}$ b) $\frac{1}{2^n}$ c) $\frac{1}{2^{n-1}}$ d) none of these
- (vi) $X \sim \text{Bin}(8, p)$ and $Y \sim \text{Bin}(8, q)$ independently, then covariance between X and Y is
a) 0 b) 0.5 c) -0.5 d) none of these
- (vii) $X \sim \text{Bin}(n, p)$, $P(X \geq a)$ is
a) left continuous **b) right continuous** c) continuous d) none of these
- (viii) If for a random variable X, if $E(X - E(X)) = 0$ then all the observations are
a) Positive b) negative c) a & b both **d) none of these**

- (ix) The mean deviation about mode is equal to mean deviation about median in Bin (n, p) when p is equal to
- a) $\frac{1}{2}$ b) $\frac{1}{3}$ c) 0 d)) none of these
- (x) The 13th order central moment of Bin (n, $\frac{1}{2}$) is
- a) **0** b) n c) $\frac{n}{2}$ d)) none of these
- (xi) For the binomial distribution (12, $\frac{1}{2}$) , the probability P(X = atmost 1)
- a) **13.** $(\frac{1}{2})^{12}$ b) $1 - (\frac{1}{2})^{12}$ c) $1 - (\frac{2}{3})^{12}$ d) none of these
- (xii) In Bin (n, $\frac{1}{2}$) mean is mode
- a) Less than b) greater than **c) equal to** d)) none of these
- (xiii) If the mode of the binomial distribution is 3 and 4, then
- a) $p = \frac{1}{2}$ b) $p > \frac{1}{2}$ c) $p < \frac{1}{2}$ **d) none of these**
- (xiv) The mode of Bin (6 , $\frac{1}{2}$) is/are
- a) 4 **b) 3** c) 1 d) none of these
- (xiv) The mode of Bin (5 , $\frac{1}{2}$) is/are
- a) 2 **b) 2 and 3** c) 2 or 3 d) none of these

Prepared by

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