



ST. LAWRENCE HIGH SCHOOL
A JESUIT CHRISTIAN MINORITY INSTITUTION



SOLUTION WORKSHEET-15

SUBJECT - STATISTICS

Term : 1st

Topic – POISSON DISTRIBUTION
Full Marks: 15

Class: XII
Date:16.06.2020

Q1. Select the correct alternative of the following questions.

- (i) $X \sim \text{Poisson}(\lambda)$, then r th order factorial moment $\mu_{[r]} =$
a) λ^r b) λ^{r+1} c) λ^{r-1} d) none of these
- (ii) A random variable X denotes no of misprints per page of a book. The average of X is 3. Then the variance of X is
a) 2 **b) 3** c) 2.25 d) none of these
- (iii) Poisson distribution has double modes at $X=3$ and $X=4$, then CV is
a) 100% b) 200% **c) 50%** d) none of these
- (iv) Binomial distribution tends to Poisson distribution when n is too
a) small **b) large** c) 0.5 d) none of these
- (v) A Poisson distribution has double modes at $X=5$ and $X=6$, then parameter is
a) 5 **b) 6** c) 5.5 d) none of these
- (vi) $X \sim \text{Poisson}(1)$, then β_2 is equal to
a) 0 b) 2 **c) 4** d) none of these
- (vii) $X \sim \text{Poisson}(\lambda)$, $P(X \leq a)$ is
a) left continuous b) right continuous c) continuous **d) none of these**
- (viii) If for a random variable $X \sim \text{Poisson}(1)$, $E(X - E(X))^4$ is equal to
a) 0 b) 1 **c) 4** d) none of these

- (ix) If a random variable X defines the number of accidents, then X follows
 a) binomial **b) Poisson** c) Uniform d) none of these
- (x) If $X \sim \text{Poisson}(2)$, then $P(X = 2)$ is
 a) $2e^{-2}$ b) $2e^2$ **c) $2e^{-1}$** d) none of these
- (xi) If $X \sim \text{Poisson}(1)$, then $P(X \leq 0)$ is
 a) $2e^{-2}$ b) $2e^2$ **c) e^{-1}** d) none of these
- (xii) Standard deviation of a Poisson distribution is 4. Then the value of β_1 is
 a) **0.625** b) 0.675 c) 0.657 d) none of these
- (xiii) The probability distribution which has mean equal to its standard deviation is
 a) binomial b) Poisson c) Uniform **d) none of these**
- (xiv) The 3rd order central moment of Poisson (4) is
 a) **4** b) 3 c) 6 d) none of these
- (xv) If $X \sim \text{Poisson}(2.5)$, then mde lies at X=
 a) **2** b) 3 c) 4 d) none of these

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