SYLHET CADET COLLEGE

FIRST TERM-END EXAMINATION - 2024

Set: A

CLASS: XI

MULTIPLE CHOICE QUESTIONS

Subject Code: 1 3 0

STATISTICS SECOND PAPER

TIME – 25 minutes

FULL MARKS – 25

[N.B. – Answer all the questions. Each question carries ONE mark. Block fully, with a black ball- point pen, the circle of the letter that stands for the correct/best answer in the "Answer sheet" for the Multiple Choice Questions Examination.]

Candidates are asked not to leave any mark or spot on the question paper.

1. **A die is rolled twice. How many possible outcomes are there?**
   (a) 6   (b) 12   (c) 36   (d) 18

   Answer the next TWO questions based on the following information.

   An urn contains 5 red, 7 blue, and 8 green balls.

2. **What is the probability that the ball drawn is red?**
   (a) 0.26   (b) 0.25   (c) 0.2   (d) 0.4

3. **P(The ball drawn is not blue)–**
   (a) $\frac{13}{20}$ (b) 0.5   (c) $\frac{7}{20}$ (d) $\frac{8}{20}$

4. **The conditions for a cumulative distribution function (CDF) are–**

   i. $F(x)$ is non-decreasing.

   ii. $0 \leq F(x) \leq 1$

   iii. $\lim_{x \to \infty} F(x) = 1$

   Which one is correct?
   (a) i and ii   (b) ii and iii   (c) i and iii   (d) i, ii, and iii

5. **Which one is not a discrete random variable?**
   (a) Summation two die throw outcome   (b) Weight
   (c) Number of heads in five coin tosses   (d) Released version number of a software

6. $f(x) = x^2; 0 < X < 4$; **What is $F(4)$?**
   (a) 16   (b) 0   (c) 4   (d) 1

   Answer the next three questions based on the following information

   The probability function of random variable x is given below:
   $$P(x) = \frac{2x+1}{k}; x = 1, 2, 3, 4$$

7. **What is the value of k?**
   (a) 18   (b) 25   (c) 12   (d) 24

8. **What is $E(X)$?**
   (a) 1.75   (b) 2.92   (c) 3.25   (d) 2.25

9. **What is $V(X)$?**
   (a) 1.05   (b) 3.0   (c) 1.5   (d) 1.25

10. **The characteristics of binomial distribution–**
    i. $E(X) > V(X)$
    ii. $E(X) = V(X)$
    iii. $E(X) = np$

    Which one is correct?
    (a) i and ii   (b) i and iii   (c) ii and iii   (d) i, ii and iii

11. **The parameter of a Poisson Distribution is 5. What is its mean?**
    (a) 2   (b) 5   (c) 2.24   (d) 25

12. **When does Binomial Distribution tend to Poisson Distribution?**
    (a) $n \to \infty, p \to 0$ & np is finite   (b) $n \to \infty, p \to 0$ & np is infinite
    (c) $n \to \infty, p0\infty$ & np is finite   (d) $n \to 0, p \to \infty$ & np is infinite

13. **A City has a dependency ratio of 0.52. If its working-age population (15-64) is 50,000, what is the total number of dependents (0-14 and 65+)?**
    (a) 15,600   (b) 20,000   (c) 26,000   (d) 30,000

Quote

Answer Key

1. (c) 36

2. (a) 0.26

3. (a) $\frac{13}{20}$

4. (d) i, ii, and iii

5. (d) Released version number of a software

6. (d) 1

7. (d) 24

8. (b) 2.92

9. (a) 1.05

10. (b) i and iii

11. (b) 5

12. (a) $n \to \infty, p \to 0$ & np is finite

13. (c) 26,000