21U274S (Pages: 2) Name……

Reg. No……

SECOND SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2022

(CUCBCSS – UG)

CC15U BCA2 C03 – COMPUTER ORIENTED STATISTICAL METHODS

(Statistics - Complementary Course)

(2016 to 2018 Admissions – Supplementary/Improvement)

Time: Three Hours Maximum: 80 Marks

Part - A

Answer ***all*** questions. Each question carries 1 mark.

1. The median of the variate values 11, 7, 6, 9, 12, 15, 19 is …….

   (a) 9 (b) 12 (c) 15 (d) 11

2. For a Poisson distribution which of the following is true

   (a) Mean> Variance (b) Mean< Variance (c) Mean=Variance (d) Mean≥Variance

3. Two coins are thrown simultaneously the probability of obtaining 2 heads is

   (a) ¼ (b) ½ (c) ¾ (d) 1

4. Correlation coefficient lies between.

   (a) -∞ to +∞ (b) -∞ to +1 (c) -1 to +1 (d) 0 to 1

5. The term regression was introduced by

   (a) R.A Fisher (b) Sir Francis Galton

   (c) Karl Pearson (d) Charles Spearman

6. If $F(x)$ is the distribution function of a random variable then $F(+\infty)$= …….

7. The empirical relation between mean, median and mode is …….

8. The size of the test is called …….

9. If A and B are two independent events, P(A ∩ B) = …….

10. The normal distribution is symmetric about …….

(10 × 1 = 10 Marks)

Part - B

Answer ***all*** questions. Each question carries 2 marks.

11. Define interval estimation.

12. Define classical definition of probability.

13. Define students t distribution.

14. Distinguish between Type I and Type II errors.

15. Define median.

(5 × 2 =10 Marks)

Part - C

Answer any ***five*** questions. Each question carries 4 marks.

16. Define skewness and kurtosis.
17. Write down any 4 properties for normal distribution.
18. Explain desirable properties of a good estimator.
19. Find mean for the following data.

0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
5	8	7	12	28	20	10	10

20. State and prove addition theorem for two events.
21. Write down the merits and demerits of mode.
22. A box contains 8 red, 3 white and 9 blue balls. If 3 balls are drawn at random, determine the probability that

    a) All three are blue b) 2 red and 1 is white
23. Obtain mean and variance of Poisson distribution with parameter λ.

(5 × 4 = 20 Marks)

Part - D

Answer any ***five*** questions. Each question carries 8 marks.

24. Explain different types of correlation.
25. Obtain the rank correlation coefficient between marks in two subjects A and B scored by 10 students.

A	88	72	95	60	35	46	52	58	30	67
B	65	90	86	72	30	54	38	43	48	75

26. State and prove Baye's theorem.
27. Explain measures of central tendency.
28. Price of a commodity (in rupees) for six months in two cities are as follows:

City A	48	40	53	44	57	49
City B	47	41	50	46	58	47

Compare the consistency of the prices in these two cities.

29. Define Binomial distribution. Obtain the m.g.f and hence establish the additive property.
30. Fit a straight line to the following data.

X	1	2	3	4	5	6	7
Y	7	13	19	25	32	40	50

31. If $f(x,y) = e^{-x-y},\ 0 < x, y < \infty$, Find the conditional distributions of X given Y and Y given X.

(5 × 8 = 40 Marks)

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