19U308 (Pages: 2) Name: .....

Reg.No: .....

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2020

(CBCSS - UG)

CC19U STA3 C02 - PROBABILITY DISTRIBUTIONS AND PARAMETRIC TESTS

(Statistics - Complementary Course)

(2019 Admission - Regular)

Time : 2.00 Hours Maximum : 60 Marks

Credit : 3

Part A (Short answer questions)

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

1. If X follows binomial distribution with mean 5 and variance 3. Find 'n'
2. If a discrete random variable X follows $P(\lambda)$, what is its mean and standard deviation?
3. Write the probability density of a normal variate with mean 20 and Standard deviation 4.
4. Define standard normal distribution.
5. What are sampling units?
6. Write down the various steps involved in testing of statistical hypothesis.
7. Define statistical test. Write a note on two tailed test.
8. Write a note on p value.
9. What are the assumptions of t test?
10. Write down the test statistic for testing the significant difference between means of two populations in case of large sample test.
11. State central limit theorem.
12. Write down the null and alternative hypothesis in paired t test.

(Ceiling: 20 Marks)

Part B (Short essay questions)

Answer ***all*** questions. Each question carries 5 marks.

13. State the properties of normal distribution.

14. If X is normally distributed with mean 10 and variance 16. Find P(15<X<23).

15. Explain stratified random sampling state its advantages.

16. Develop the large sample test for testing the equality of means of two populaton.

17. In two colleges affliated to a university 46 out of 200 and 48 out of 250 candidates failed in an examination. If the percentage of failure in the university is 18% examine whether the colleges differ significantly.

18. Explain paired t-test.

19. The following are the marks obtained by 10 students in an examination 43, 48, 65, 57, 31, 60, 37, 48, 78, 59. Test the hypothesis that the population variance is 100.

(Ceiling: 30 Marks)

Part C (Essay questions)

Answer any ***one*** question. Each question carries 10 marks.

20. Fit a poisson distribution for the following data.

x	0	1	2	3	4	5
f	142	156	69	27	5	1

21. Test whether the following samples come from normal populations with same variance.

Sample A	60	65	55	58	66	59	70	72
Sample B	63	66	58	49	60	61	69	71

(1 × 10 = 10 Marks)

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