K21U 1147

Reg. No. : ....

Name : ....

IV Semester B.Sc. Degree CBCSS (OBE) Regular Examination, April 2021
(2019 Admission Only)
Complementary Elective Course in Statistics
4C04STA (G&P) : INFERENTIAL STATISTICS

Time : 3 Hours

Max. Marks : 40

Instruction : Use of calculators and statistical tables are permitted.

PART – A (Short Answer)

Answer **all** questions.

(6×1=6)

1. Define the term 'parameter'.

2. Define an unbiased estimator.

3. What do you mean by confidence interval estimation ?

4. How do you understand a statistical test ?

5. Define large sample test.

6. Define non-parametric tests.

PART – B (Short Essay)

Answer **any 6** questions.

(6×2=12)

7. What are the desirable properties of a good estimator ?

8. Obtain the 95% confidence interval for the mean of a population with known SD.

9. Define simple and composite hypotheses.

10. Explain the role of standard error in testing hypothesis problems.

11. Distinguish between significant level and power of a test.

12. What are the assumptions of a t test ?

13. Define Mann-Whitney U tests.

14. What are the assumptions of analysis of variance ?

P.T.O.

PART – C (Essay)

Answer **any 4** questions. (4×3=12)

15. Define sufficient estimator. Give an example.

16. Obtain the 95% confidence interval for the difference of two population proportions.

17. Explain one-tailed and two-tailed tests of hypothesis.

18. Explain goodness of fit.

19. A sample of 400 male students is found to have mean height of 171.38 cm. Can it reasonably have regarded as a sample from a large population with mean height 171.17 cm and sd 3.30 cm ?

20. Outline the structure of two-way ANOVA table.

PART – D (Long Essay)

Answer **any 2** questions. (2×5=10)

21. A sample of 100 tyres is taken from a lot. The mean life of tyres is found to be 39.35 km with a sd of 3.26 km. Obtain the 99% confidence limits for the mean life of tyres.

22. Explain the procedures of testing hypothesis.

23. In a sample of 8 observations, the sum of squared deviations of items from the mean was 84.4. In another sample of 10 observations, the value was found to be 102.6. Test whether the difference in the variance· of the two populations is significant at 5% level.

24. The following data represent the number of units of production per day turned out by 5 different workers using 4 different types of machines.

		Machine Type			
		A	B	C	D
	1	44	38	47	36
	2	46	40	52	43
Workers	3	34	36	44	32
	4	43	38	46	33
	5	38	42	49	39

i) Test whether the mean productivity is the same for the different machine type.

ii) Test whether the 5 men differ with respect to mean productivity.

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