QP CODE: 25803009

25803009

Reg No : .....

Name : .....

INTEGRATED MSC DEGREE EXAMINATION, JUNE 2025

Eight Semester

INTEGRATED MSC BASIC SCIENCE-STATISTICS

CORE - IST8CR01 - STATISTICAL INFERENCE II

2020 Admission Onwards

474A9E3C

Time: 3 Hours Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. What is alternative hypothesis?
2. What you mean by p value?
3. What is Monotone Likelihood ratio test?
4. Define testing in one parameter exponential family.
5. What do you mean by α Similar test.
6. State OC curve.
7. Define ASN function.
8. State Kolmogorov Smirnov One Sample Test.
9. What is Mann-whitney U test?
10. Define Wald-Wolfowitz run test.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. What is MP test, Give Examples.
12. a) What is UMP Test?
    b) Write any two properties.
13. What is the pitman estimator in statistics?
14. "Similar region test of level α leads to a Neymann structure tests of level α , If there exists a complete sufficient statistic T ". Elucidate.

15. Briefly Explain Sequential Analysis and its procedure.

16. Obtain Wald's SPRT of strength (α, β) for testing $H_0 : P = P_0 Vs H_1 : P = P_1 (P_1 > P_0)$, based on observations from B(n,p).

17. Explain one sample sign test.

18. Explain Wilcoxon signed rank test.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Derive the NP lemma.

20. Explain LRT and prove the properties of it.

21. What you mean by SPRT? Give its procedure.

22. Explain Non-parametric test.

(2×5=10 weightage)