SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
M.Sc. - END SEMESTER EXAMINATIONS APRIL - 2022
SEMESTER - II
20PBSCT2004 - Statistical Inference - II

Total Duration : 3 Hrs.   **Total Marks : 60**

Section A

Answer any **SIX** questions $(6 \times 5 = 30$ Marks$)$

1. Define most powerful test and explain it with an suitable example.

2. Explain unbiased test with an example.

3. Define locally most powerful test and state the theorem for construction of LMP.

4. Write short notes on operating characteristic function.

5. Explain sign test for and two samples.

6. Discuss uniformly most powerful test for distribution of monotone likelihood ratio test.

7. Write short notes on optimum property of SPRT and ASN.

8. Explain the procedure of Mann-Whitney test.

Section B

Part A

Answer any **TWO** questions $(2 \times 10 = 20$ Marks$)$

9. State and prove Neyman Pearson fundamental lemma for non-randomised case.

10. Explain uniformly most powerful similar test for testing the hypothesis of one parameter exponential family such that:
Ho:$\theta 1 \leq \theta \leq \theta 2$ versus HA: $\theta < \theta 1$ or $\theta > \theta 2$.

11. Obtain likelihood ratio test for binomial distribution.

12. Explain the method of Kolmogorov-Smirnov one and two samples test.

Part B

Compulsory question $(1 \times 10 = 10$ Marks$)$

13. State and prove generalised Neyman Pearson lemma for randomised case.

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