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. Biostatistics - END SEMESTER EXAMINATIONS APRIL - 2024
SEMESTER - II
20PBSCT2004 - Statistical Inference - II

Total Duration : 2 Hrs. 30 Mins. Total Marks : 60

Section B

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

1. Explain the steps for formulation of hypothesis testing.
2. Explain the statement of the theorem for construction of LMP test.
3. Classify Non parametric methods over parametric methods.
4. Let x_1,x_2,.....x_n be a random sample from exponential distribution with density function F(x)=$\frac{1}{\lambda}$ e$^{\frac{-1}{\lambda}x}$;Find the most powerful level test for H:$\lambda = 1$ vs K:$\lambda = 1/2$.
5. State the UMPU test for one parameter exponential family for the hypothesis H_0: θ=θ_0 versus H_1: $\theta \neq \theta_0$.
6. Distinguish between UMP and LMP tests.
7. Explain Median Test method in detail.
8. Examine Kruskal - Wallis Test in detail.

Section C

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

9. State and prove the Neyman Pearson Lemma.
10. Apply the UMP test of two sided hypotheses
    H_0: $\theta \leq \theta_1$ or $\theta \geq \theta_2$versus
    H_1: $\theta_1 < \theta < \theta_2$for one parameter exponential family of distributions.
11. Infer the Uniformly most powerful test for one parameter exponential family for the hypohesis H_0: $\theta_1 \leq \theta \leq \theta_2$ versus H_1: $\theta < \theta_1$ or $\theta > \theta_2$.
12. Explain the procedure for testing using Wald - Wolfowitz Run test method.

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

13. Examine the Kolmogorov - Smirnov test for two samples in detail.

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