Exam Date & Time: 01-Oct-2020 (02:00 PM - 05:45 PM)

PSG COLLEGE OF ARTS AND SCIENCE

Note: Writing 3hrs: Checking & Inserting Image : 30mins+ Grace Time : 15mins

MSc DEGREE EXAMINATION MAY 2020
(Fourth Semester)

Branch - STATISTICS
STATISTICAL INFERENCE -II [14STP18]

Marks: 75   **Duration: 225 mins.**

ALL questions carry EQUAL marks

Answer all the questions.

1)
   a   Explain briefly two types of errors in testing of hypothesis and discuss the level of significance.

   b   Distinguish between Randomized and Non Randomized test.
<div align="center">OR</div>   (15)

   c   Write a note on uniformly most power test.

   d   State and prove Neyman Pearson Lemma for the randomized case.

2)
   a   Discuss Unbiased test procedure.

   b   Prove that the power of BCR for testing a simple hypothesis against a simple alternative is never les than its size.
<div align="center">OR</div>   (15)

   c   Explain uniformly most powerful test.

   d   Explain invariant test.

3)
   a   Explain the concept of Likely hood ratio test.

   b   Obtain the test procedure for testing $\sigma_1 = \sigma_2$ in the normal population with known means.
<div align="center">OR</div>   (15)

   c   State the properties of LR test.

   d   Discuss the concept of Chi square goodness of fit tests.

4)
   a   Describe the Wald SPR test.

   b   Determine the constants A and B in SPRT.
<div align="center">OR</div>   (15)

   c   Derive the OC function of the SPRT.

   d   Give the SPRT for testing $H_0 : \theta = \theta_0$ against $H_1 : \theta = \theta_1$ $(> \theta_0)$ in sampling from a normal density.

5)   (15)

   a   What are the advantages of non-parametric test?

   b   Describe Median test in detail.

<div align="center">OR</div>

   c   Describe briefly Kolmogorov Simirov test for goodness of fit in case of one sample.

   d   Explain one sample sign test procedure.

-----End-----