**[LF 1014]** **OCTOBER 2014** **Sub. Code: 2863**

**M.Sc., NON-MEDICAL DEGREE EXAMINATION**
**FIRST YEAR**
**(New Regulation)**
**BRANCH II - BIOSTATISTICS**
**PAPER III – STATISTICAL INFERENCE, SAMPLING METHODS AND SAMPLE SIZE**

***Q.P. Code : 282863***

**Time : Three hours** **Maximum : 100 marks**

**I. Elaborate on :** **(2 x 20 = 40)**

1. a) Derive Kolmogorov Smirnov Test.
   b) Apply Manwhitney U Test for the following data represent the lifetimes(hours) of batteries for two different Medical equipments:
   Equipment A : 40, 30, 40, 45, 55, 30
   Equipment B : 50, 50, 45, 55, 60, 40
   Are these equipments different with respect to average life and also whether they have come from the same population.

2. Methods of Sampling Techniques.

**II. Write notes on:** **(10 x 6 = 60)**

1. Estimate, Consistent Estimate and Unbiased Estimate
2. Give example for Cramer Rao inequality, when the underlying regularity conditions are violated?
3. Invariance property of MLE
4. Test for independence of contingency tables
5. Quantile tests
6. MVUE and BLUE
7. Differentiate Multiphase and Multistage Sampling
8. Systematic sampling and explain when we should not use systematic sampling
9. Compare census and sample survey
10. Non-probability sampling techniques

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