# First Year M Phil Clinical Epidemiology (Part Time) Regular Examinations August 2023

## Paper I – Basic Research Methodology including Epidemiology, Biostatistics and Research Ethics

**Time: 3 hrs**                                                 **Max marks:100**

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space • Answer all parts of a single question together*
- *Leave sufficient space between answers • Draw table/diagrams/flow charts wherever necessary*
- *Write Section A and Section B in separate answer books. Do not mix up questions from Section A and Section B*

**QP Code: 101531**                                              **Max marks:50**

## Section A: Basic Research methodology including epidemiology and research ethics

**Essays:**                                                  **(5x10=50)**

1. Describe attributable risk and prevented fraction. A new CORONA vaccine is being launched in Kerala. How do you PLAN to evaluate prevented fraction for the population using this vaccine.
2. A new drug (KERAL-ANTI-COVID) is being tested in Kerala. Design a robust study to evaluate its efficacy and safety. Consider REMDESIVIR as standard of care.
3. The RT-PCR for covid infection has 80% sensitivity. How do you propose to increase its sensitivity using concept of serial and parallel testing. You may consider a combination of other screening items or tests.
4. What do you understand by terms "Validity and Reliability" in medical research. Describe types of validity and methods of measuring them.
5. Compare case-control and Cohort study designs. You want to learn about risk factors of breast cancer. Which study designs would you choose for various potential risk factors.

**************************

**QP Code: 102531**                **Section B: Biostatistics**                **Max marks:50**
**Essays:**                                                  **(5x10=50)**

1. Describe various scales of measurements used in health research with two appropriate examples for each scale from Health science. Mention advantages and disadvantages of each scale.
2. Enumerate and define various measures of central tendency. Describe various types of data where each of these measures are appropriate to use.
3. Describe Simple random sampling, stratified random sampling and Cluster sampling with appropriate applications in health science for each of these methods.
4. Discuss applications of Independent student 't' test and paired 't' test with appropriate examples and assumptions.
5. Describe the sample size estimation procedure for a Cohort study with binary primary outcome and making appropriate assumptions.

***************************