3. Attempt any _TWO_ parts of the following: 2×5 CO3
   a. In which situation scatter diagram method is used to find the CO3
      coefficient of correlation.

   b. Consider a case study. There is a research problem. In this CO3
      problem there are multiple variables. More than one variable is
      dependent. None of the variable is matric. Which kind of
      multivariate analysis is best suitable for the analysis of this
      problem? Explain this method in brief.

   c. Derive the mathematical expression for autocorrelation CO3
      function of sum of two stationary processes

4. Attempt any _TWO_ parts of the following: 2×5 CO4
   a. Research report is a channel of communicating the research CO4
      findings to the readers of the report. What precautions must
      be considered while writing a good research report.

   b. "Interpretation is an art of drawing inferences, depending CO4
      upon the skill of the researcher". Elucidate the given
      statement explaining the technique of interpretation.

   c. Provide an outline of best research report. Mentioned the CO4
      characteristics on the basis the your report outline is best.

5. Attempt any _TWO_ parts of the following: 2×5 CO5
   a. What are National Institute for Health Research (NIHR) CO5
      guidelines for Carbon Reduction in Clinical Trials.
   b. When one can claim authorship of a content. What are CO5
      responsibility of author who published the research as author.
      A person helping in Data collection, editing of grammar and
      Language deserve authorship or not?
   c. Ram has made a bountiful painting which was not existing CO5
      earlier. His work may be protected under which law of
      intellectual property right. Explain this law. How many years
      his work will be protected under this law.

Ph. D.
FIFTH SEMESTER THEORY EXAMINATION, 2022-23
RM031
RESEARCH METHODOLOGY

Time: 02 Hours   **Max. Marks: 50**

Note:

- Attempt all questions. All questions carry equal marks.
- Assume missing data suitably.

1. Attempt any **_TWO_** parts of the following: 2×5   CO1
   a. "Empirical research in India in particular creates so many   CO1
      problems for the researchers". State the problems that are
      usually faced by such researchers.
   b. Outline the main characteristics of proper abstract of a   CO1
      research article. Write abstract for any technical research of
      your choice.
   c. What do you mean by Evolutionary Epistemology? Describe   CO1
      fitness in its population dynamics.

2. Attempt any **_TWO_** parts of the following: 2×5   CO2
   a. Distinguish between an experiment and survey. Explain fully   CO2
      the survey method of research.

   b. Classify the data given below for the marks of 30 students   CO2
      using tally sheet: 20, 15, 70, 50, 84, 85, 86, 87, 88, 20, 30,
      51, 40, 60, 84, 86, 54, 34, 65, 83, 83, 54, 60, 81, 87, 81, 84,
      86, 89, 90.

   c. Clearly explain the difference between collection of data   CO2
      through questionnaires and schedules.