

- N.B. (1) All Questions are **compulsory**  
(2) Make **suitable assumptions** wherever necessary and **state the assumption** mode  
(3) Answers to the **same questions** must be **written together**  
(4) Numbers to the **right** indicate **marks**  
(5) Draw **neat labelled diagrams** wherever necessary

- Q.1 Attempt Any three.** 15
- What is research? List and explain various types of research.
  - Describe the process of research design in the context of exploratory research.
  - Define research design. List and explain the need of research design.
  - Define research problem. List and explain the techniques of defining the research problem.
  - Explain the concept of research approaches.
  - List the different steps involved in research process and explain them.
- Q.2 Attempt Any three.** 15
- Describe the factors involved in data collection.
  - List and explain various types of measurement scales with suitable examples.
  - Write the difference between test of validity and reliability.
  - What is probability sampling? Describe it with suitable sample.
  - List and explain the primary data collection methods.
  - List the steps involved in sampling design development.
- Q.3 Attempt Any three.** 15
- Define the terms **i. Inferential ii. Univariate iii. Bivariate iv. correlation v. Descriptive**
  - List and explain different ways to determine sample tests.
  - Define sampling. Explain its need.
  - Define hypotheses. List its characteristics.
  - Draw the flow diagram of hypothesis testing and explain.
  - List and explain the various processing operations.
- Q.4 Attempt Any three.** 15
- Describe the layout of research report.
  - Where research paper can be published? Explain.
  - What are the steps involved in technical report? Explain.
  - Define plagiarism. List and explain the plagiarism detection tools.
  - List and explain the precautions to be taken by researcher while interpreting findings.
  - Explain the EndNote reference management tools.
- Q.5 Attempt Any three.** 15
- List and explain the ethical responsibilities of researcher.
  - What are research ethics? Explain in detail.
  - Define E-research. Explain by giving suitable examples.
  - What are the ethical considerations in e-research? Explain.
  - What is the need for ethical awareness.
  - Write a short note on professional ethics.