

IM.Sc. AIML Sem.-6 Examination

CC-312

Research Methodology

April-2025

Time : 2-30 Hours]

[Max. Marks : 70

Instructions: All questions are compulsory.

- Q.1** (a) Discuss the role of research in business decision-making. Provide real-world examples where research influenced strategic business decisions. (07)
- (b) How do you define a research problem? Illustrate the process with an example (07)
- OR**
- (a) What are the key components of a research proposal? Explain their significance (07)
- (b) Prepare a structured outline of a research proposal on any topic of your choice (07)
- Q.2** (a) What is the role of randomization, control groups, and replication in experimental research? (07)
- (b) Discuss the advantages and limitations of using secondary data in research (07)
- OR**
- (a) What are the different types of research designs, and how are they classified? (07)
- (b) Explain the concept of confounding variables and their impact on causal inferences (07)
- Q.3** (a) What are the strengths and limitations of qualitative research compared to quantitative research? (07)
- (b) Discuss the advantages and challenges of using focus groups for data collection (07)
- OR**
- (a) Explain the four levels of measurement (nominal, ordinal, interval, and ratio) with suitable examples. (07)
- (b) Differentiate between single-item and multiple-item scales with examples (07)
- Q.4** (a) Compare and contrast structured, semi-structured, and unstructured questionnaires with examples. (07)
- (b) What is pilot testing, and why is it essential before administering a questionnaire? (07)
- OR**
- (a) What are the key factors to consider when deciding whether to use open-ended or close-ended questions in a questionnaire? (07)

- (b) Describe the steps involved in administering a questionnaire and how to handle non-response bias. (07)

Q.5 Attempt any **SEVEN** out of **FOURTEEN (True or False)** (14)

- (1) Secondary data refers to information collected firsthand by the researcher.
- (2) Causal research design is used to establish cause-and-effect relationships.
- (3) Focus group discussions are an example of qualitative research
- (4) The primary objective of research is only to generate new knowledge, not to solve problems.
- (5) Closed-ended questions allow respondents to provide detailed, open-ended responses.
- (6) Using secondary data always ensures accuracy and reliability
- (7) Pilot testing a questionnaire helps identify potential issues before large-scale use
- (8) Leading questions can influence responses and introduce bias
- (9) Hypothesis formulation is necessary for all types of research
- (10) The nominal scale is the most advanced level of measurement
- (11) Comparative scaling techniques involve comparing one item against another
- (12) A well-structured research proposal must include objectives, methodology, and expected outcomes
- (13) Classification of data involves differentiating between qualitative and quantitative data.
- (14) Research is a systematic and objective process of collecting information to make decisions.
