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1511N758

Candidate's Seat No : _____

Int. M.Sc. (DS) (NEP) Sem.-5 Examination

DSC-M-DTSC-354T

Research Methodology

November-2025

Time : 2-00 Hours] **[Max. Marks : 50**

Instructions: All questions are compulsory. Use of non-programmable scientific calculator is allowed.

Q.1 **(a)** 'Hypothesis are the guiding forces in any research study'. Justify and explain. **(05)**

(b) Distinguish between a decision problem and a Research problem. **(05)**
Do all decision problem require research? Explain and illustrate with examples.

OR

(a) Does exploratory research always lead to conclusive research? Give adequate examples to explain your perspective. **(05)**

(b) The Indian Army wants to ascertain why young students do not select the armed forces as a career option in their graduation. **(05)**
(a) How would you formulate a research problem to resolve the dilemma?
(b) What would be the variables under study?
(c) How would you generate descriptive and relational hypotheses for your study?

Q.2 **(a)** Distinguish between cross sectional and longitudinal designs. In what situations would you recommend the usage of one over other? **(05)**

(b) Describe the factorial design. What are the strengths and weaknesses of factorial design? **(05)**

OR

(a) What are the different ways of controlling extraneous variables? **(05)**

(b) Distinguish between internal and external data collection. In what situations would you recommend the usage of one over another. **(05)**

Q.3 **(a)** Explain four key measurement levels with the help of examples. What mathematical operations/statistical techniques are and are not permissible on data from each type of scale? **(05)**

(b) Distinguish between Focus group discussions and personal interviews. **(05)**

OR

(a) What is measurement error? Discuss various types of measurement accuracy and the methods to measure them. **(05)**

(b) Suppose there are five banks located near your residence. Determine a constant sum rating scale to understand the preferences for these banks. **(05)**

Q.4 **(a)** What are the various types of questions that can be included in questionnaire? **(05)**

(b) What is the difference between a questionnaire and a schedule? What are the steps involved in the questionnaire design? **(05)**

OR

(a) What principles should be followed for an ideal questionnaire design? Illustrate with suitable examples **(05)**

P.T.O.

(b) Write short notes on any two of the following: (05)

(a) Pilot testing a questionnaire.
(b) Structured vs unstructured questionnaires
(c) Comparative vs noncomparative scales.

Q.5 Attempt any **TEN** out of **TWELVE:** (Each carries 01 mark) (10)

(1) Independent variables are also called treatments.
a) TRUE
b) FALSE

(2) Which of the following is a Probability Sampling technique?
a) Quota Sampling
b) Convenience Sampling
c) Snowball Sampling
d) Stratified Random Sampling

(3) Primary data collection methods have a significant time and cost advantage over secondary data collection methods.
a) TRUE
b) FALSE

(4) The variable that is measured or observed as a result of the manipulation of another variable is the:
a) Independent Variable
b) Extraneous Variable
c) Dependent Variable
d) Moderator Variable

(5) Research design is the flexible contract between the researcher and the client about the methodology of the study.
a) TRUE
b) FALSE

(6) Research design formulation follows the problem definition and the data collection stage.
a) TRUE
b) FALSE

(7) The principle of research ethics that requires the researcher to secure written consent from participants after informing them fully about the study's nature, risks, and benefits is:
a) Confidentiality
b) Informed Consent
c) Debriefing
d) Anonymity

(8) In the randomized block design, it is assumed that the scores on the dependent variable in each of the block would be more or less same.
a) TRUE
b) FALSE

(9) Census data is an example of primary data source.
a) TRUE
b) FALSE

(10) Which of the following scales uses a series of bipolar adjectives (e.g., Good/Bad, Strong/Weak) to measure a respondent's attitude toward a specific concept?
a) Guttman Scale
b) Semantic Differential Scale
c) Likert Scale
d) Nominal Scale

(11) The sequential approach where a questionnaire begins with broad, general questions and progressively moves to specific, detailed questions is known as the:
a) Classification sequence
b) Inverted Funnel sequence
c) Funnel sequence
d) Flowchart structure

(12) The reliability of a questionnaire refers to:
a) The degree to which all options are collectively exhaustive and mutually exclusive.
b) The consistency and stability of the measurement result over time and across different items.
c) The extent to which the instrument accurately measures the concept it intends to measure.
d) The speed and ease with which the instrument can be completed by the respondent.

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