



BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – B.Optomtry-2021/B.Optomtry-2022

Course Name – Research Methodology and Bio-statistics

Course Code - BOPTOS506

(Semester V)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) What type of data represents categories with no inherent order or ranking?
 - a) Interval data
 - b) Nominal data
 - c) Ordinal data
 - d) Ratio data
- (ii) What is the process of gathering information from the targeted population for research purposes called?
 - a) Data Analysis
 - b) Data Collection
 - c) Data Interpretation
 - d) Data Validation
- (iii) What is a structured set of questions used for obtaining information from respondents in a standardized way?
 - a) Interview
 - b) Survey
 - c) Experiment
 - d) Observation
- (iv) Which data collection method allows for in-depth exploration of participants' thoughts and experiences?
 - a) Surveys
 - b) Experiments
 - c) Interviews
 - d) Observations
- (v) Which of the following is an advantage of using interviews for data collection?
 - a) Limited in-depth information
 - b) Standardized responses
 - c) High response rate
 - d) Probing for detailed responses
- (vi) What is a disadvantage of using secondary data in research?
 - a) Expensive
 - b) Time-consuming
 - c) Lack of control over data quality
 - d) Limited availability
- (vii) What type of sampling method involves selecting individuals who are easiest to reach?

- a) Snowball sampling b) Convenience sampling
c) Stratified sampling d) Random sampling
- (viii) What is the process of selecting a subset of individuals from a larger population to represent the whole group?
a) Sampling b) Data interpretation
c) Data analysis d) Data validation
- (ix) Which data collection method is most suitable for studying people's behavior in natural settings?
a) Experiments b) Interviews
c) Surveys d) Observations
- (x) What is the technique of gathering data from a sample group repeatedly over time called?
a) Longitudinal study b) Cross-sectional study
c) Retrospective study d) Case-control study
- (xi) What is the key drawback of convenience sampling?
a) It is time-consuming b) It may lead to biased results
c) It is expensive d) It requires advanced statistical knowledge
- (xii) Which of the following sampling techniques is commonly used in clinical trials and medical research to compare treatments?
a) Snowball sampling b) Random sampling
c) Stratified sampling d) Randomized controlled trials
- (xiii) What is mortality rate?
a) Number of births per 1,000 people b) Number of deaths per 1,000 people
c) Number of marriages per 1,000 people d) Number of immigrants per 1,000 people
- (xiv) Which of the following is a common measure of mortality in a specific population?
a) Birth rate b) Death rate
c) Fertility rate d) Migration rate
- (xv) What is the primary purpose of statistical software?
a) Creating presentations b) Analyzing and interpreting data
c) Writing code d) Designing websites

Group-B

(Short Answer Type Questions)

3 x 5=15

2. What is the mean, and how is it calculated? (3)
3. Discuss the advantages of using secondary data in research. (3)
4. Explain the interquartile range (IQR) and its significance in statistics. (3)
5. Define random sampling and its Importance. (3)
6. Discuss the advantages of cluster sampling in large-scale research studies. (3)

OR

How should a researcher address potential limitations of their study in a research proposal? (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Explain the concept of qualitative data in research with example. (5)
8. What is the importance of research design in the overall research process? (5)
9. Explain the situations in which ANOVA is preferable over a t-test and also describe the one-way ANOVA procedure with a suitable example. (5)

10. Explain the concept of effect size and its relevance in determining the practical significance of research findings. (5)
11. Describe the role of interviews in qualitative data collection. (5)
12. Explain the concept of sampling distribution and its importance in inferential statistics. (5)

OR

Explain simple, stratified, cluster random sampling. (5)

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