



BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – B.Sc.(MLT)-2022

Course Name – Research Methodology

Course Code - BMLTE505A

(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) Identify the correct statement for the alternate hypothesis.
- a) It proposes that no statistical significance is there between two sets of data
 - b) It proposes that there is statistical significance between two sets of data.
 - c) It is always be rejected.
 - d) It is always be accepted
- (ii) In a research paper, choose the portion of text which is identified as Bibliography.
- a) Foot note
 - b) References
 - c) Biography
 - d) Biography
- (iii) Identify the mean of 20, 30 and 40.
- a) 25
 - b) 30
 - c) 32
 - d) 40
- (iv) You want to study the effect of a drug in a patient group. Select the you of research you will perform.
- a) Clinical trial
 - b) Case study
 - c) Epidemiological study
 - d) Regression study
- (v) Identify the characteristics of pilot study.
- a) The researcher tests the design of the research project, usually the data gathering method(s) to be used in the research project, before carrying out the research
 - b) The research supervisor carries out the research
 - c) The research project is designed but it is not carried out
 - d) The student researcher learns how to carry out research
- (vi) You measure blood pressure from different student groups. Identify the type of research.
- a) Applied
 - b) Descriptive
 - c) Analytical
 - d) Qualitative
- (vii) Select the example of qualitative data.

- a) Pass or fail
c) Distance between stars
- b) Height of basketball players
d) Marks obtained
- (viii) To which of the following options do individual respondents, focus groups, and panels of respondents belong?
- a) Primary data sources
c) Itemised data sources
- b) Secondary data sources
d) Pointed data sources
- (ix) Select the component that measure of central tendency is most affected by extreme values or outliers?
- a) Mean
c) Mode
- b) Median
d) Range
- (x) Which of the following is a measure of central tendency?
- a) Standard deviation
c) Median
- b) Variance
d) Range
- (xi) You are selecting students of roll no. 1, 11, 21, 31, 41 and 51. Identify the type of sampling.
- a) Stratified sampling
c) Convenience sampling
- b) Systematic sampling
d) Purposive sampling
- (xii) What type of scaling is used when categorizing stages of cancer (Stage 1, Stage 2, Stage 3, Stage 4)?
- a) Nominal
c) Interval
- b) Ordinal
d) Ratio
- (xiii) Name the last page of a research report.
- a) Title page
c) Index
- b) Appendix
d) Bibliography
- (xiv) Which software is commonly used for statistical analysis and data visualization in biostatistics and epidemiology?
- a) Microsoft Excel
c) MATLAB
- b) R
d) Final Cut Pro
- (xv) Which of the following is NOT an example of a research method?
- a) Surveys
c) Literature review
- b) Interviews
d) Experiments

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Give three examples of unethical research practice. (3)
3. Give example of snowball sampling. (3)
4. The following table shows the heights in cm of two groups of people, group A and group B (3)

Group A	160	160	160	175	180	170	160	165	155
Group B	180	160	230	160	170	165	125	150	145

For each of the groups calculate the mean, median and mode in terms of height.

5. Distinguish between Null hypothesis and alternative hypothesis. (3)
6. You want to study the role of a fertilizer X on plants. List the control variables you should keep in mind. (3)

OR

Compute the median of the given data: 7, 4, 3, 5, 6, 3, 3, 3, 2, 4, 3, 4, 3, 3, 4. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. A data set has a mean of 50, a median of 45, and a mode of 40. Explain the distribution of the data. (5)
8. In the data set: 1, 2, 2, 3, 4, 4, 4, 5, evaluate the mode and Determine if there is a mode in the following data set: 10, 20, 30, 40, 50. If there is no mode, explain why. (5)
9. Explain with example: Bar diagram can be used in data presentation. (5)
10. Justify the statement: Plagiarism is a malpractice in research. (5)

11. **Data set 1: 102, 98, 103, 86, 101, 110** (5)

Data set 2: 90, 89, 100, 97, 102, 97

- Analyze to select data set with greater

standard deviation.

12. The diseases prevalence of the populations is correlated with health insurance policy incurred. The data variation is given below: Malaria, Dengue, Typhoid, Parkinson's, Surgery, Neurodegenerative disorders, Brain injury would be 58, 32, 63, 87, 67, 45, 68 in correlation with insurance policy 2, 4, 5, 7, 3, 1, 6 respectively. Calculate the correlation coefficient with the variables. Interpret the results. (5)

OR

A random sample of $n=50$ female patients showed a mean avg of protein intake is 799gm with a standard deviation of 27gm. Find a 95% and 99% confidence level with mean avg population mean. (5)

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