



BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – B.Sc.(PA)-2022/B.Sc.(PA)-2023

Course Name – Principles of Biostatistics and Research Methodology

Course Code - BPAC601

(Semester VI)

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 measure of central tendency that is most affected by outliers:
 - a) Mean
 - b) Median
 - c) Mode
 - d) Variance
- (ii) Select the measure of central tendency that divides the data into two equal parts:
 - a) Mean
 - b) Median
 - c) Mode
 - d) Range
- (iii) Given the dataset: 10, 12, 14, 16, 18, 20, 22, 24, 26, 28. Select the median value.
 - a) 14
 - b) 16
 - c) 18
 - d) 20
- (iv) Identify the following which is not included as a criteria for research objective:
 - a) It is the outcome that a researcher aim to achieve
 - b) There is always one objective in a research proposal
 - c) It drives the research project towards a direction
 - d) It focuses on the key methods that should be followed in a research
- (v) Identify the option which may not be followed to conduct a research problem timely.
 - a) A timeline must be followed
 - b) Research objective should be achievable
 - c) A stopwatch should be used to complete every research procedure in time
 - d) Major and minor deadlines can be followed for a research
- (vi) Identify the incorrect option: The term 'Achievable' in preparing a research objective means-
 - a) The objectives should be achieved in timely manner
 - b) The objectives should be achievable within the allotted fund
 - c) The objectives should be achieved regularly without any problem
 - d) The objectives should be achieved in the present scenario realistically
- (vii) You are trying to find out the treatment of prostate cancer. Identify the type of research you want to do.

- a) Descriptive
c) Qualitative
- b) Analytical
d) Applied
- (viii) Identify the essential point to prepare a good questionnaire.
- a) The respondent fills the form by himself/herself
b) The data collector collects the data
- c) The data collector must be trained before collection of the data
d) It is a costly method
- (ix) Identify the incorrect option regarding the source of secondary data.
- a) Internet
b) Newspaper
c) Journal
d) Survey
- (x) Select the correct option regarding social research.
- a) It is about statistical analysis.
b) It is done by sociologists
c) It is about investigating some aspect of the social world
d) It is always complex and difficult to understand
- (xi) Compute the sum of all numbers, if the average of 4 numbers is 20.
- a) 16
b) 24
c) 80
d) 5
- (xii) In a research paper, choose the portion of text which is identified as Conclusion.
- a) Interpretation of data
b) Result of data
c) Discussion of data
d) None of these
- (xiii) Identify the term used to perform a complete survey of population.
- a) Report
b) Sample
c) Census
d) Calculation
- (xiv) You want to write thesis on your research data. Identify the format you should follow.
- a) The format of research article.
b) The format of Dissertation.
c) The format of short note.
d) The format of reporting.
- (xv) Identify type I error.
- a) False positive
b) False negative
c) Error in interpretation
d) Error in research hypothesis

Group-B

(Short Answer Type Questions)

3 x 5=15

2. It has been found that the use of sterilized needle decreases the rate of disease transfer. (3)
Identify the dependent variable and independent variable in this procedure.
3. Validate the sample size in statistics. (3)
4. Summarize Harvard citation style. (3)
5. Describe Standard Error. (3)
6. Calculate A.M., median and mode of 30, 31, 31, 32, 32, 32, 33, 34, 35, 35, 36, 36, 36, 36, 37, (3)
38, 39, 39, 39, 40, 40.

OR

Differentiate between Qualitative and Quantitative data.

(3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Calculate the variance of the following frequency distribution.

(5)

Class Boundary	Frequency
0-6	5
6-12	11
12-18	12
18-24	15
24-30	8
30-36	6
36-42	3

8. Explain frequency distribution table for quantitative data with examples Height (in inches): 64, 68, 72, 66, 70, 68, 66, 64, 70, 68, 64, 72, 68, 70, 66. (5)
9. Compare different illustrations of qualitative data with examples. (5)
10. Estimate a and b in simple linear regression model $Y = a + bX$ from the following bivariate dataset on (X, Y) : (5)

X	1	5	3	4	6	7	2
Y	3	2	4	8	6	5	7

11. Justify the statement: Plagiarism is a malpractice in research. (5)

12. Estimate the variance for the following frequency distribution: (5)

Class interval	20-32	33-45	46-58	59-71	72-84	85-97
Frequency	13	14	22	11	15	17

OR

Evaluate Pearson's r of the following bivariate data: (5)

X	0	1	0.4	-2	-1.6	3
Y	-12	-8	-5	4	8	7

Mention the nature of correlation between X and Y from the value of r .