



# BRAINWARE UNIVERSITY

Term End Examination 2023-2024

Programme – B.Physiotherapy-2020

Course Name – Research Methodology and Biostatistics

Course Code - BPT804

( Semester VIII )

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) Write the correct statement about standard error.
  - a) It is the mean value of data set.
  - b) It is the dispersion of data around the mean.
  - c) It is the likelihood of differences between sample mean and population mean
  - d) It is the error in calculating the data
- (ii) Identify the term used to perform a complete survey of population.
  - a) Report
  - b) Sample
  - c) Census
  - d) Calculation
- (iii) Identify the research type if a doctor studies the relative effectiveness of two drugs of dengue fever.
  - a) Descriptive survey
  - b) Experimental research
  - c) Case study
  - d) Qualitative research
- (iv) Name the term for first page of a research report.
  - a) Title page
  - b) Name page
  - c) Index
  - d) Bibliography
- (v) In logistic regression, what type of outcome variable is typically used?
  - a) Continuous
  - b) Categorical
  - c) Ordinal
  - d) None of these
- (vi) Recognize the most important criteria to judge a research.
  - a) Research duration
  - b) Research title
  - c) Research objectives
  - d) Total expenditure on research
- (vii) Specialised processes such as graphical and numerical methods are utilised in which of the following?
  - a) Education statistics
  - b) Descriptive statistics
  - c) Business statistics
  - d) Social statistics
- (viii) Identify testing the significance of a sample correlation coefficient, degree of freedom=

- a) n  
c) n-2
- b) n-1  
d) n2
- (ix) Select the option which is considered unethical
- a) If the research is trying to prove a particular point  
c) If the research does not investigate the data scientifically
- b) If the research does not ensure anonymity and privacy of the respondent  
d) If the research is not of a very high standard
- (x) Identify the research tool used in collecting data.
- a) Questionnaire  
c) Illustration
- b) Graph  
d) Diagram
- (xi) Select the following is NOT a characteristic of a randomized controlled trial (RCT)?
- a) Random allocation of participants to treatment groups  
c) Selection bias is eliminated
- b) Blinding of participants and investigators  
d) Observational design without intervention
- (xii) List the following study designs is best suited for assessing causality?
- a) Case-control study  
c) Cross-sectional study
- b) Cohort study  
d) Descriptive study
- (xiii) Identify measure of central tendency is most influenced by outliers?
- a) Mean  
c) Mode
- b) Median  
d) Standard deviation
- (xiv) In a one-way ANOVA, the null hypothesis states that:
- a) There is no difference between the means of the groups  
c) There is no correlation between the groups
- b) There is a significant difference between the means of the groups  
d) There is no variability within the groups
- (xv) ANOVA is a statistical method used to analyze
- a) Differences between two independent groups  
c) Differences between three or more independent groups
- b) Differences between two related groups  
d) Differences between three or more related groups

### Group-B

(Short Answer Type Questions)

3 x 5=15

2. Distinguish between Null hypothesis and alternative hypothesis (3)
3. Summarize Pilot survey in research methodology (3)
4. Write a short note on case control study. (3)
5. Give example of snowball sampling. (3)
6. Estimate the standard error for 9 samples with standard deviation 2.70. (3)

OR

Construct a pie diagram of the given data: Among 50 students in BPT2020 batch, 33 are obese. (3)

### Group-C

(Long Answer Type Questions)

5 x 6=30

7. Point out the possible sources of error in measurement (5)
8. Create a frequency distribution table (using tally marking) from the age of the students in your class: 21, 21, 20, 21, 19, 22, 24, 25, 20, 21, 22, 22, 23, 19, 20, 21, 21, 20. (5)
9. Write any five good ethical practices that can be implemented in research. (5)

10. Justify the statement: The mean, median and mode of the data 28, 26, 28, 27, 28, 28, 30, 31, 24, 26, 28, 32, 29, 27, 30, 32 are different. (5)
11. Differentiate between analytical study and descriptive study. (5)
12. Justify the statement: Plagiarism is a malpractice in research. (5)

**OR**

Justify the statement: Preparation of research objective is very crucial in conducting a research. (5)

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