

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 0321]

**MARCH 2021**

**Sub. Code: 2474**

**(AUGUST 2020 EXAM SESSION)**

**BACHELOR IN PROSTHETICS AND ORTHOTICS**

**THIRD YEAR (Regulation 2017-2018)**

**PAPER IV – RESEARCH METHODOLOGY AND BIO STATISTICS**

***Q.P. Code : 802474***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Data collection form experiments and Surveys.
2. Testing of Hypothesis.
3. Measurements and scaling techniques: Measurement scales and sources of error in measurement.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Need for Sampling.
2. Types of analysis of data.
3. Criteria for selecting sampling procedure.
4. Definition of Statistics/Biostatistics.
5. Tabular presentation of data.
6. Construction of Frequency distribution.
7. Histogram.
8. Types of Research.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Meaning of research.
2. Statement of research.
3. Method of collecting primary data.
4. Quantitative variable with example.
5. Application of Biostatistics.
6. Ogives or Cumulative frequency curves.
7. Bar diagrams and Pie diagrams.
8. Necessity of defining the problem
9. Types of sampling.
10. Exclusive and inclusive method of classification of Data.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 0222]

**FEBRUARY 2022  
(AUGUST 2021 EXAM SESSION)**

**Sub. Code: 2474**

**BACHELOR IN PROSTHETICS AND ORTHOTICS  
THIRD YEAR (Regulation 2017-2018)  
PAPER IV – RESEARCH METHODOLOGY AND BIO STATISTICS  
Q.P. Code : 802474**

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on: (3 x 10 = 30)**

1. Objectives of Research Problem and necessity of defining the problem
2. Types of Research
3. Different Presentation of Data.

**II. Write notes on: (8 x 5 = 40)**

1. Research Methodology
2. Randomized Controlled Trial (RCT) Study Design
3. Sources of Errors in Measurement
4. ANOVA
5. Student's T-Test
6. Interval Scale and Ratio Scale
7. Stratified and Cluster Sampling
8. Bibliography

**III. Short answers on: (10 x 3 = 30)**

1. Types of analysis
2. Surveys
3. Define data.
4. Continuous Variable
5. Inclusion & Exclusion Criteria
6. Measurements & Scaling
7. Secondary Data
8. Non-Probability Sampling
9. Statistical Analysis
10. Software used for Data collection & Analysis

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

**[AHS 0423]**

**APRIL 2023**

**Sub. Code: 2474**

**BACHELOR IN PROSTHETICS AND ORTHOTICS  
THIRD YEAR - (Regulation 2017-2018 onwards)  
PAPER IV – RESEARCH METHODOLOGY AND BIO STATISTICS  
*Q.P. Code: 802474***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on: (3 x 10 = 30)**

1. Diagrammatic presentation of Data such as:
  - a) Bar diagram
  - b) Pie diagram
  - c) Line diagram
  - d) Pictogram and Cartogram.
2. Measurement and Scaling Techniques:
  - i) Measurement scales
  - ii) Source of Measurement error.
3. Testing of Hypothesis with example.

**II. Write notes on: (8 x 5 = 40)**

1. Applications of Biostatistics.
2. Types of Research approaches.
3. Data collection from Experiments and Surveys.
4. Criteria for selecting sampling procedure.
5. Types of Analysis.
6. Ogive or Cumulative frequency curves.
7. Statement of Research Problem and purpose and objective.
8. Methods of collecting Primary data.

**III. Short answers on: (10 x 3 = 30)**

1. Need for sampling.
2. Descriptive statistics.
3. Meaning of Research Design.
4. Need for Research Design.
5. Definition of Biostatistics.
6. Qualitative Data with example.
7. Cumulative and Relative frequency distribution.
8. Inclusive method of classification of Data.
9. Meaning of Research.
10. Objective of Research.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 1123]

NOVEMBER 2023

Sub. Code: 2474

**BACHELOR IN PROSTHETICS AND ORTHOTICS**  
**THIRD YEAR (Regulation 2017-2018 onwards)**  
**PAPER IV – RESEARCH METHODOLOGY AND BIO STATISTICS**  
*Q.P. Code: 802474*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Distinguish between an Experimental and Survey Research. Explain fully the Survey Method of Research.
2. What points will you keep in mind while preparing a Research Report? Explain.
3. What are the applications of ANOVA One way and Two-way in Clinical Prosthetics?

**II. Write notes on:**

**(8 x 5 = 40)**

1. Distinguish between Statistic and Parameter.
2. State the advantages and limitations of Diagrammatic representation of Data.
3. What are the benefits of conducting an Experimental Study?
4. Explain the construction of Histogram.
5. Explain Non Linear Regression.
6. Write a note on elements of ANOVA.
7. Explain the process of Random Sampling.
8. What is a t-test? When it is used and for what purpose(s)? Explain by means of examples.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Stratified Sampling.
2. Bibliography and its importance in context of Research report.
3. Footnotes.
4. Cross tabulation.
5. Collection of Data Through Questionnaires.
6. Role of Research in Clinical Prosthetics.
7. Standard Deviation.
8. Spearman's Rank Correlation.
9. Ogive.
10. Randomized Block Design (R.B. Design).

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