

This question paper contains 3 printed pages]

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S. No. of Question Paper : 5615

Unique Paper Code : 3183010013

Name of the Paper : Research Methodology (DSE)

Name of the Course : B.Sc. (Hons.) Biomedical Science (NEP)

Semester : VI

Duration : 3 Hours

Maximum Marks : 90

(Write your Roll No. on the top immediately on receipt of this question paper.)

Answer five questions in all.

Question No. 1 is compulsory.

Give illustrations and examples wherever necessary.

Subparts of the questions should be attempted together.

1. (a) Abbreviate the following terms : 2×1=2
- (i) DOI
- (ii) RCT
- (b) State True/False. Give reason : 2×2=4
- (i) Theoretical research primarily focuses on direct observation and experimentation.
- (ii) E-books are considered a non-academic source for literature review.

P.T.O.

(c) Write short notes on the following :

4×3=12

- (i) Predatory Journals
- (ii) Oral Presentation
- (iii) Types of Plagiarism
- (iv) Research Background.

2. (a) Explain the significance of hypothesis generation in research methodology. How does a well-defined hypothesis contribute to the research process ?
- (b) Discuss how factors such as sample size, replication, and control groups affect study outcomes when researching diseases like Leprosy or Cardiovascular disease. 9,9
3. (a) Using relevant examples, compare and contrast the different types of research methodologies :
- (i) Fundamental Vs. Applied
 - (ii) Quantitative Vs. Qualitative.
- (b) Discuss the significance of research ethics in scientific writing. How do ethical principles such as honesty, integrity, and transparency influence the quality and credibility of scientific research ? 9,9
4. (a) What is the impact factor, and how is it determined ? Critically assess its significance as a metric for evaluating journal quality.
- (b) Differentiate between observational and interventional studies in clinical research. Provide examples of each.

- (c) Differentiate between a research paper and a review article in terms of structure, and purpose, and content. 6,6,6
- 5. (a) Discuss the importance of Intellectual Property Rights (IPR) in research and innovation.
- (b) Explain the significance of randomization and blinding in clinical trials. How do these methods help in reducing bias ?
- (c) Discuss the importance of visual elements (graphs, images, and charts) in poster presentations. How can you ensure they enhance rather than distract from your key messages ? 6,6,6
- 6. (a) What is the peer-review process ? Explain its role in ensuring the quality of scientific research.
- (b) Describe the key differences between cohort and case-control studies in the epidemiology of tuberculosis (TB). Provide an example of each study type in TB research.
- (c) Outline the step-by-step process of writing a research grant proposal, highlighting the importance of each step. 6,6,6