

(b) What is a hypothesis? Discuss the qualities of a good hypothesis. (6)

6. (a) What are the ethical issues in scientific research. Discuss the importance of **any three** ethical issues in research publishing. (8)

(b) Give an example of the following (**any four**)
(1×4=4)

- (i) International journal
- (ii) Data presentation tool/software
- (iii) Journal finder tools
- (iv) Referencing styles
- (v) Research Funding government agency in India.

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 289

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Unique Paper Code : 2533012012

Name of the Paper : Research Methodology (DSE)

Name of the Course : **B.Sc. (Hons.) Microbiology**

Semester : VI, Part-III (NEP-UGCF)

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **five** questions.
3. **All** questions carry equal marks.
4. Attempt **all parts** of the question together.

1. Describe the following in brief : (**Any six**)
(2×6=12)
- (a) Bibliography
 - (b) Endnote
 - (c) Peer review
 - (d) Applied research
 - (e) Intellectual property
 - (f) Impact factor
 - (g) Sample size
 - (h) Independent variable
2. (a) What is a literature review? Describe the process of conducting an effective literature search and explain its importance in research. (5)
- (b) What is non-experimental research? Explain. (3)
- (c) Discuss the importance of lab notebooks. Comment on the key information to be recorded while maintaining the lab notebooks. (4)

3. (a) Differentiate between the following (**Any three**) :
(3×3=9)
- (i) Null hypothesis and alternative hypothesis
 - (ii) Quantitative and qualitative research
 - (iii) Poster and oral presentation
 - (iv) Basic and applied research
- (b) What is impact factor of a journal? Discuss its importance. (3)
4. Write short notes on the following : (**Any three**)
(4×3=12)
- (a) Good laboratory practices (GLP)
 - (b) Student t-test
 - (c) Radiation safety
 - (d) Characteristics of a good sample
5. (a) Describe the structure of a research paper explaining each section in detail. (6)