

M.Sc. (Micro) Semester - 4 (CBCS) Examination
March/April - 2024 (NEW COURSE)
Research Methodology, IPR and Biosafety (Core)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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SECTION – I

- Q.1 Answer the following: (14)
- A. Define the research problem and explain the aims and objectives of the research.
 - B. Discuss the data validation and explain its importance.
- OR
- Q.1 Answer the following:
- A. Write a detailed note on plagiarism.
 - B. Write a note on protocol optimization.
- Q.2 Discuss the types of patents and their application in the field of biotechnology. (14)
- OR
- Q.2 Answer the following:
- A. Explain the international framework for IP protection.
 - B. Explain the Trademark and mention its importance.
- Q.3 Answer the following: (Any Seven) (07)
1. Give two examples of plagiarism tools.
 2. Explain the importance of IP in biological sciences.
 3. Why is optimization necessary in bioprocessing? Explain in brief.
 4. Explain WIPO in brief.
 5. Define Hypotheses.
 6. What is ANOVA? Explain its importance.
 7. Define provisional patent.
 8. Define geographical indication.

SECTION - II

- Q.1 Answer the following: (14)
- A. Write notes on scientific research.
 - B. Discuss the role of an international funding agency.
- OR
- Q.1 Answer the following:
- A. Write a note on research schemes and their importance in academic institutes.
 - B. Enlist the basic components of the research proposal and design the objective and methodology of any biological science topic.
- Q.2 Explain the role of IBSC, RCGM and GEAC in the Genetic Modification of Organisms. (14)
- OR
- Q.2 Answer the following:
- A. Write notes on primary and secondary containment.
 - B. Write notes on Biosafety level-2 and 3.
- OR
- Q.3 Answer the following: (Any Seven) (07)
1. What is PPE?
 2. Enlist the four national funding agencies.
 3. State environmental release of GMOs.
 4. Explain the advantages of the BSL-4 facility.
 5. What is the Cartagena protocol?
 6. Explain the components required to prepare a research paper.
 7. Define containment.
 8. Define the criteria of risk assessment.
