647510 **MSC4MicC418x** **Seat No :_____**

M.Sc. (Micro) Semester - 4 (*CBCS*) Examination
March/April - 2026 (As Per Syllabus Year June-2019)
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.

Section-01

Que.1 Explain in detail the process of identifying a research problem, framing aims and objectives, and writing a research paper. **(14)**

OR

Que.1 **Answer the following**

(1) Explain plagiarism in detail.
(2) Discuss the roles and responsibilities of mentor and mentee.

Que.2 Explain the fundamentals of intellectual property rights and the concept of geographical indication in detail. **(14)**

OR

Que.2 **Answer the following**

(1) Write a note on copyright law.
(2) Describe different types of patents and their significance.

Que.3 **Answer the following** (any seven out of **eight**) **(07)**

(1) Explain plagiarism in brief.
(2) Explain the application of multivariate analysis in research.
(3) Define hypothesis.
(4) What is data validation?
(5) Define the WIPO and TRIPS.
(6) Explain why traditional knowledge applicable for patent.
(7) What is provisional patent?
(8) Define trademark.

Section-02

Que.1 Describe the national and international funding agencies in R&D and explain its role in the improvement of the economy. **(14)**

OR

Que.1 **Answer the following**

(1) Describe the components of a research proposal.
(2) Discuss the role of national and international funding agencies.

Que.2 Explain biosafety fundamentals in detail, including biosafety levels, biological safety cabinets, and primary containment for biohazards. **(14)**

OR

Que.2 **Answer the following**

(1) Explain biosafety levels 1 and 4 with examples.
(2) Describe the concept of risk analysis and risk assessment.

Que.3 **Answer the following** (any seven out of **eight**) **(07)**

(1) Explain the function of GEAC in brief.
(2) Explain the features of level-2 biological safety cabinet.
(3) What is primary containment?
(4) Define the risk assessment.
(5) Explain Cartagena Protocol in brief.
(6) Enlist any two national funding agencies.
(7) Differentiate the applied and basic research.
(8) Define scientific research.

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