

M.Sc. (Botany) 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 the steps involved in formulating a research problem and objectives. (14)

OR

Que.1 Answer the following

- (1) Discuss hypothesis testing with suitable examples.
- (2) Describe the process of scientific report writing and thesis preparation.

Que.2 Explain the process of patent application with guidelines and time frames. Differentiate (14)
between provisional and complete patent specifications.

OR

Que.2 Answer the following

- (1) Discuss the fundamentals of patents and their importance in research.
- (2) Explain different types of intellectual property rights with examples.

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

- (1) What is a hypothesis?
- (2) State the meaning of data validation.
- (3) What is plagiarism?
- (4) Define multivariate analysis.
- (5) Define patent.
- (6) State the meaning of geographical indication (GI).
- (7) What is TRIPS?
- (8) Define provisional patent application.

Section-02

Que.1 Explain different types of scientific research. (14)

OR

Que.1 Answer the following

- (1) Write note on types of scientific research.
- (2) Explain the types of national research scheme in detail.

Que.2 Explain biosafety levels and their significance in laboratories. Discuss biosafety regulations (14)
and guidelines in India.

OR

Que.2 Answer the following

- (1) Explain risk analysis, risk assessment, and risk management in GMOs.
- (2) Discuss environmental release of GMOs and associated concerns.

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

- (1) Define scientific research.
- (2) What is a research proposal?
- (3) Name any two funding agencies.
- (4) What is review writing?
- (5) Define research scheme.
- (6) What is biosafety level (BSL)?
- (7) Define risk assessment.
- (8) What is Cartagena Protocol?
