

M.Sc. (Botany) Semester - 1 (CBCS) Examination
OCT/NOV-2024 (AS PER SYLLABUS YEAR JUNE-2023)
Molecular Biology, Genetics & Evolution (Core (New-23))

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

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

Que.1 Answer the following (any seven) (14)

1. Explain the chemical mutagen and give the examples of it.
2. Define of organic evolution.
3. What are the difference between A and Z form of DNA.
4. Explain the role of LacA gene.
5. What is independent assortment?
6. Describe point mutation.
7. Define the law of DNA constancy.
8. What is TATA box? Explain in brief.

Que.2 Answer the following (any two)

- A. Write a note on mendalian genetics.
- B. Explain the Miller's experiment and write its importance.
- C. Give the examples of speciation and explain genetic speciation in detail.

Que.3 Answer the following (any two) (14)

- A. Explain the basic concept and principle of DNA replication.
- B. Explain the basic of genetic mapping.
- C. Write a note on structure of nucleic acids.

Que.4 Answer the following (any two) (14)

- A. Explain the operon model in prokaryote.
- B. Explain the basic and regulation of post translational modifications.
- C. Discuss the concept of gene.

Que.5 Answer the following (any two) (14)

- A. Write a note on spontaneous mutation.
- B. Discuss the extra-chromosomal inheritance and explain mitochondrial in detail.
- C. Explain DNA repair mechanisms.
