

M.Sc. (Botany) Semester - 1 (CBCS) Examination**Jan/Feb.-2022 [NEW COURSE]****MOLECULAR BIOLOGY, GENETICS AND EVOLUTION(CORE)****Time: 1:30 Hours****Marks: 42****Instructions:**

1. Figures to the right indicate marks.
2. There are five questions in the question paper.
3. Answer any three of the following questions.

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| Q.1 | Answer the following (any seven) | 14 |
| | <ol style="list-style-type: none">1. Explain law of segregation in brief.2. Define genetic mapping.3. Enlist the types of DNA and explain common form of DNA.4. Define the natural selection with example.5. What is the function of p site in translation?6. Define the types of gene concept in brief.7. What are the mechanisms of speciation?8. What is point mutation?9. Define function of CAMP.10. What is post translation modification? | |
| Q.2 | Answer the following (any two) | 14 |
| | <ol style="list-style-type: none">1. Write basic principle of organic evolution2. Explain Hardy–Weinberg equilibrium in details.3. Explain Millers experiments in detail. | |
| Q.3 | Answer the following | 14 |
| | <ol style="list-style-type: none">1. Write a note on genetic linkage.2. What is replication? Describe the DNA replication in detail. | |
| Q.4(A) | Answer the following (any two) | 10 |
| | <ol style="list-style-type: none">1. Discuss the Lac operon and its importance in cell.2. Discuss the transcription process and mention its cellular importance.3. Explain translation mechanism in prokaryotic organisms. | |
| Q.4(B) | Answer the following (any one) | 04 |
| | <ol style="list-style-type: none">1. Write note on genetic code.2. Write short note on RNA processing. | |
| Q.5 | Answer the following (Any two) | 14 |
| | <ol style="list-style-type: none">1. Explain chromosomal abbreviation in detail.2. Describe the mismatch repair mechanism.3. Describe extra chromosomal inheritance.4. Explain the induced mutations with suitable example. | |
