

M.Sc. (Botany) Semester - 1 (CBCS) Examination
OCT/NOV-2024 (AS PER SYLLABUS YEAR JUNE-2018)
MOLECULAR BIOLOGY, GENETICS AND EVOLUTION(CORE)

Time: 2:30 Hours

Marks: 70

Instructions:

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

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|----------------|---|---|
| Q.1 | Answer the following (any <u>seven</u>) | 14 |
| | <ol style="list-style-type: none"> 1. Explain the chemical mutagen and give the examples of it. 2. Define of organic evolution. 3. Explain the A and B form of DNA. 4. Explain CAP site. 5. Define the law of assortment? 6. Describe point mutation. 7. Define the law of DNA constancy. 8. What are the stop codon ? give the examples. 9. Define aneuploidy. 10. Define the term origin of life. | |
| Q.2 | Answer the following (any <u>two</u>) | 14 |
| | <ol style="list-style-type: none"> A. Write a note on mendalian genetics. B. Explain the natural selection. C. Give the examples speciation explain genetic speciation in detail. | |
| Q.3 | Answer the following (any <u>two</u>) | 14 |
| | <ol style="list-style-type: none"> 1. Explain the basic concept and principle of DNA replication. 2. Explain the basic of genetic mapping. 3. Write a note on structure of nucleic acids. | |
| OR | | |
| Q.3 | Answer the following (compulsory) | 14 |
| | <ol style="list-style-type: none"> 1. Write a note on DNA replication. 2. Write a note on DNA methylation. 3. Define the C-value paradox. | [05]
[05]
[04] |
| Q.4 (A) | Answer the following (any <u>two</u>) | 10 |
| | <ol style="list-style-type: none"> 1. Explain the operon model in prokaryote. 2. Write a note on transcription. 3. Discuss the translation process in prokaryotic system. | |
| Q.4 (B) | Answer the following (any <u>one</u>) | 04 |
| | <ol style="list-style-type: none"> 1. Explain any one operon model. 2. Write note on gene expression in prokaryote and eukaryote system. | |
| Q.5 | Answer the following (any <u>two</u>) | 14 |
| | <ol style="list-style-type: none"> 1. Write a note on spontaneous mutation. 2. Discuss the extra-chromosomal inheritance in detail. 3. Explain SOS repair mechanisms. 4. Discibe the induced mutations with example. | |
