24P228 (Pages: 2) Name : .....

Reg. No : .....

SECOND SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2025

(CBCSS-PG)

(Regular/Supplementary/Improvement)

CC19P BOT2 C04 - CELL BIOLOGY, MOLECULAR BIOLOGY AND BIOPHYSICS

(Botany)

(2019 Admission onwards)

Time: 3 Hours Maximum: 30 Weightage

Part-A

Answer any ***four*** questions. Each question carries 2 weightage.

1. Describe synaptonemal complex.
2. Explain the significance of p53 gene in cancer.
3. Explain repetitive DNA.
4. Explain the role of mutator and antimutatór genes in gene mutation.
5. Discuss Henderson Hasselbalch and Nernst equation and mention their relevance.
6. Explain PAGE using SDS gel system.
7. Explain freeze drying.

(4 × 2 = 8 Weightage)

Part-B

Answer any ***four*** questions. Each question carries 3 weightage.

8. Explain the significance of control of cell cycle.
9. Explain cellular interaction and its applications.
10. Explain the molecular mechanism of cellular differentiation.
11. Discuss the regulation of gene expression in prokaryotes.
12. Describe in detail the mechanism of prokaryotic transcription process.
13. Describe the the evolution of new genes.
14. Describe and list the application of autoradiography.

(4 × 3 = 12 Weightage)

Part-C

Answer any ***two*** questions. Each question carries 5 weightage.

15. Discuss the types of banding and their significance.

16. Discuss the mechanism and significance of cell signalling.

17. Discuss the role of primosomes and replisomes in replication of DNA.

18. Explain comparative account on colorimetry and spectrophotometry.

(2 × 5 = 10 Weightage)

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