

**B. Sc. DEGREE END SEMESTER EXAMINATION - OCTOBER 2025****SEMESTER 5 : BOTANY****COURSE : 19U5CRBOT8 : CELL AND MOLECULAR BIOLOGY AND EVOLUTION***(For Regular 2023 Admission and Supplementary 2022/ 2021/ 2020/ 2019 Admissions)*

Time : Three Hours

Max. Marks: 60

**PART A****Answer All (1 mark each)**

1. What are proto-oncogenes?
2. What is genetic drift?
3. Mention the significance of microbodies ?
4. Give the significance of dictyosomes.
5. What is unit membrane?
6. What is tumour metastasis ?
7. Who discovered Golgi Apparatus?
8. What is B-DNA?

**(1 x 8 = 8)****PART B****Answer any 6 (2 marks each)**

9. State the differences between semi conservative and dispersive mode of replication.
10. What is meant by cell cycle?
11. What is biochemical evolution?
12. Define trisomy with example.
13. How many subunits are there in *E.coli* RNA polymerase . Add a note on core enzyme and holo enzyme of *E.coli* RNA polymerase?
14. Distinguish between spontaneous and induced mutations.
15. What is meant by Kinetochore?
16. Differentiate between autopolyploidy and allopolyploidy.
17. Define Neodarwinism.
18. Briefly explain RNA splicing.

**(2 x 6 = 12)****PART C****Answer any 4 (5 marks each)**

19. Explain positive control of gene expression with an example of operon model.
20. Give an account on the Biochemical origin of life.
21. Draw and describe the structure of Golgi body.
22. Describe the Dupraw model of chromosome structure.
23. Give an account of stem cell therapy.
24. Explain the structure of B-DNA.

**(5 x 4 = 20)****PART D****Answer any 2 (10 marks each)**

25. Explain the process of translation in prokaryotes. State any four differences from eukaryotic translation.
26. Explain Lamarkian theory of evolution. What are its major drawbacks?
27. Give an account on the structural aberrations of chromosomes.
28. Explain the process of mitosis.

**(10 x 2 = 20)**