

B. Sc. DEGREE END SEMESTER EXAMINATION - OCTOBER 2024**SEMESTER 5 : BOTANY****COURSE : 19U5CRBOT8 : CELL AND MOLECULAR BIOLOGY AND EVOLUTION***(For Regular 2022 Admission and Supplementary 2021/2020/2019 Admissions)*

Time : Three Hours

Max. Marks: 60

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

1. Genetic code is unambiguous. What does it mean?
2. What is cisternae?
3. What is genetic drift?
4. What does protoplasm theory state?
5. What is transcription?
6. Differentiate between RER and SER.
7. What is meant by chromosomal bridge?
8. Explain the significance of Kozak Sequence?

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

9. Explain the organization of nucleosomes.
10. Give an account of modern cell theory?
11. Give an account of Mitochondrial DNA.
12. What are tumour suppressor genes?
13. What are salivary gland chromosomes?
14. How many subunits are there in E.coli RNA polymerase . Add a note on core enzyme and holo enzyme of E.coli RNA polymerase?
15. What is convergent evolution?
16. Comment on adaptive radiation.
17. Write down the phases of protein synthesis.
18. Write short notes on Translocation.

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

19. Give an account of the structure and function of Mitochondria
20. What are the different types of plastids? Explain.
21. Mention any four main differences between prokaryotic and eukaryotic Translation.
22. What is the role of reproductive isolation in speciation?
23. Differentiate between prokaryotic and eukaryotic promoters.
24. Give an account of cell cycle with the help of an illustration.

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

25. Describe the various phases of first meiotic division with diagrams.
26. Explain TRP operon. Add a note on attenuation.
27. Explain Lamarkian theory of evolution. What are its major drawbacks?
28. Write an essay on special type of chromosomes.

(10 x 2 = 20)