

**B. Sc. DEGREE END SEMESTER EXAMINATION - OCTOBER 2019****SEMESTER –5: BOTANY (CORE COURSE)****COURSE: 15U5CRBOT8: CELL, MOLECULAR BIOLOGY AND EVOLUTION**

*(Common for Regular 2017 Admission & Improvement 2016/Supplementary 2016/2015 Admissions)*

Time: Three Hours

Max. Marks: 60

**PART A****I. Answer ALL questions; each question carries 1 mark.**

1. What are thylakoids?
2. Name the stages in which pairing and terminalization of homologous chromosome's take place.
3. What are secondary lysosomes?
4. Why mitochondria are described as power houses of the cell?
5. Genetic code is commaless. What does this statement mean?
6. What is a cistron?
7. Who proposed the theory of inheritance of acquired characters?
8. What is genetic drift?

(1 x 8 = 8)

**PART B****II. Answer any SIX questions; each question carries 2 marks.**

9. Write about membrane proteins.
10. Explain any two functions of lysosomes.
11. Distinguish transion and transversion.
12. Write an account on histone proteins associated with chromatin.
13. Describe the structure of the enzyme for transcription in prokaryotes.
14. Explain tRNA charging.
15. Describe the linkages in a nucleotide.
16. What are oncogenes?
17. Distinguish monocistronic and polycistronic mRNA.
18. Comment on the main features of germplasm theory.

(2 x 6 = 12)

**PART C****III. Answer any FOUR questions; each question carries 4 marks.**

19. Distinguish the ribosomes of eukaryotes and prokaryotes.
20. Explain the structure of Lampbrush chromosome.
21. Explain euploidy.
22. What are the salient features of genetic code?
23. Explain RNA processing in eukaryotes.
24. Explain Darwin's theory of natural selection.

(4 x 4 = 16)

**PART D**

**IV. Answer any 2 questions; each question carries 12 marks.**

25. Give an account of structural aberrations of chromosomes.

**OR**

26. Explain the molecular mechanisms of mutation.

27. Describe the structure of DNA double helix. Add a note on different types of DNA.

**OR**

28. Explain the process of translation in prokaryotes.

(12 x 2 = 24)

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