Reg. No..... Name.....

B.SC. DEGREE END SEMESTER EXAMINATION OCTOBER 2016

SEMESTER – 5: BOTANY (CORE COURSE)

COURSE: U5CRBOT8 – CELL, MOLECULAR BIOLOGY AND EVOLUTION

Time: Three Hours Max. Marks: 60

PART A

I. Answer **ALL** questions; each question carries **ONE** mark.

1. What is Lamarckism?
2. What is reproductive isolation?
3. What is cell theory?
4. Why are lysosomes known as “the cleaners” of cell waste?
5. What are B- chromosomes?
6. Distinguish between transition and transversion.
7. What are the normal cellular functions of tumor-suppressor genes?
8. What are Okazaki fragments?

(1 x 8 = 8)

PART B

II. Answer **ANY SIX** questions; each question carries **TWO** marks

9. What are the major differences between prokaryotic and eukaryotic cells?
10. Describe the organization of nucleosomes.
11. Draw the general structure of a nucleotide.
12. Differentiate between progressive evolution and retrogressive evolution.
13. Describe the structural organization of ribosomes.
14. What is attenuation?
15. Explain the semidiscontinuous replication of DNA.
16. What are the unique features of lamp brush chromosomes?
17. What are stem cells? Describe the types of stem cells.
18. Describe the role of mutation as a factor responsible for evolution.

(2 x 6 = 12)

PART C

III. Answer **ANY FOUR** questions; each question carries **FOUR** marks.

19. Draw a diagram to illustrate the structural features of *lac* operon.
20. What is genetic drift?
21. What is interphase? What are the three stages of interphase?
22. Write a brief description on the processing of eukaryotic mRNA precursors.
23. What are point mutations? Give examples.
24. Describe the ultrastructure of nucleus.

(4 x 4 = 16)

PART D

IV. Answer **ANY TWO** questions; each question carries **TWELVE** marks.

25. Briefly describe the details of translation process.

OR

26. Write an essay describing the ultra-structure of plant cells.

27. Describe the different stages of and significance of meiosis.

OR

28. Describe the major theories of evolution.

(12 x 2 = 24)

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