TB145120B **Reg. No.....**

Name.....

B. Sc. DEGREE (C.B.C.S.S.) EXAMINATION, APRIL 2017
Supplementary – 2014 Admission
SEMESTER V - CORE COURSE (BOTANY)
BOT5CMBE - CELL & MOLECULAR BIOLOGY AND EVOLUTION

Time: Three Hours **Maximum Marks: 60**

PART A

I. Answer all questions . Each question carries 1 mark.

1. Who proposed cell theory?
2. What is the significance of meiosis?
3. Define trisomy.
4. Define transversion.
5. Who discovered the nucleus of the cell?
6. What are molecular chaperones?
7. Who proposed the theory of inheritance of acquired characters?
8. Name the plant in which de Vries observed mutation and proposed his Mutation theory.

(8x1= 8)

PART B

II. Answer any *six* questions . Each question carries 2 marks

9. Write a note on the functions of endoplasmic reticulum.
10. Give an account on metastasis.
11. Draw a neat labelled diagram of chloroplast.
12. Comment on mitochondria.
13. Define euploidy and mention different types.
14. What are Chargaff's rules
15. Write a note on central dogma of molecular biology.
16. What is genetic code? Mention important characteristics of genetic code.
17. What is parallel evolution? Cite an example.
18. Give an account on Genetic drift.

(6x2=12)

PART C

III. Answer any four questions . Each question carries 4 marks .

19. Explain the structure and function of nucleolus.
20. Discuss different types of chromosomes based on the position of centromere.
21. Give an account on physical and chemical mutagens.
22. What is lac Operon? Explain the components of lac Operon in E.coli.
23. Give an account on variation and evolution.

24. Discus isolation as an evolutionary force.

(4x4=16)

PART D

IV. Answer any two questions. Each question carries 12 marks.

25. With the help of sketches explain various steps in mitosis.
26. Write an essay on special type of chromosomes.
27. What is semi-conservative replication of a DNA? Discuss Meselson-Stahl experiment.
28. Give a detailed account on Darwin's theory of evolution. Explain the criticism against this theory.

(2x12=24)