E 6264 (Pages : 3) Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2013

Fifth Semester

Core Course—CELL MOLECULAR BIOLOGY AND EVOLUTION

(Common for the programmes B.Sc. Botany Model I and Model II)

Time : Three Hours Maximum Weight : 25

Part A

Answer **all** *questions.*
Objective type — Weight 1 *each for a bunch of four questions.*

BUNCH I

Choose the correct answer :

1. The cell theory was proposed by :
   (a) Weismann. (b) DeVries.
   (c) Johannsen. (d) Schleiden and Schwann.
2. The function of nucleolus is the synthesis of :
   (a) Proteins. (b) Ribosomes.
   (c) Lipids. (d) Alkaloids.
3. The synthesis of RNA from DNA is called :
   (a) Translation. (b) Mutation.
   (c) Transformation. (d) Transcription.
4. Charles Darwin is the father of :
   (a) Mutation. (b) Evolution.
   (c) Biotechnology. (d) Tissue culture.

BUNCH II

Fill in the blanks with appropriate word or words :

5. ——— discovered cell nucleus.
6. Lampbrush chromosomes are seen in ———.
7. Ethyl Methane Sulphonate is a ——— mutagen.
8. Tumour inducing genes are called ———.

Turn over

BUNCH III

State whether true or false :

9. Frederick Miescher discovered nucleic acids.
10. Single base change occurs in DNA is called point mutation.
11. Stem cells are not pluripotent.
12. Mutations are the back bone of evolution.

BUNCH IV

Name the following :—

13. A chemical used to induce polyploidy.
14. Who proposed the Central Dogma ?
15. The cell organelle that synthesize proteins.
16. A special type of chromosome seen in the salivary gland of insects.

(4 × 1 = 4)

Part B (Short Answer questions)

Answer any **five** *of the following.*
Weight 1 *each.*

17. What is unit membrane ?
18. Define plastids.
19. What are nucleosomes ?
20. What is aneuploidy ?
21. What are stem cells ?
22. What is semiconservative DNA replication ?
23. Expand PTC.
24. What is tumour metastasis ?

(5 × 1 = 5)

Part C (Short essay/Problem solving type)

Answer any **four** *of the following.*
Weight 2 *each.*

25. Explain the importance of endoplasmic reticulum.
26. Describe the importance of karyotype analysis.
27. Explain the role played by polyploidy in evolution.
28. Briefly describe lactose operon in bacteria.

29. Explain how induced mutations are useful.

30. Distinguish the ribosome of eukaryote from that of prokaryote.

(4 × 2 = 8)

Part D (Write Essays)

Answer any **two** *of the following.*
Weight 4 *each.*

31. Explain the structural chromosomal aberrations and its Significance.

32. Describe mitotic cell division and its significance.

33. Describe the structure of DNA double helix.

(2 × 4 = 8)