K20U 0090

Reg. No. : .....

Name : .....

VI Semester B.Sc. Degree (CBCSS – Reg./Supple./Improv.) Examination, April 2020
(2014 Admission Onwards)
CORE COURSE IN BOTANY/PLANT SCIENCE
6B13 BOT/PLS : Cell and Molecular Biology

Time : 3 Hours Max. Marks : 40

SECTION – A
(Answer **all**)

1. One gene-one enzyme hypothesis was put forward by
   a) Jacob and Monad b) Beadle and Tatum
   c) Hershey and Chase d) Mc Leod and Mc Carthy

2. Single membrane bound organelle seen only in plants concerned with the conversion of fatty acid to carbohydrate
   a) Mitochondria b) Glyoxisomes
   c) Ribosomes d) Centrioles

3. Crossing over takes place during
   a) Leptotene b) Zygotene c) Pachytene d) Diplotene

4. The point mutation in which a purine is substituted by a pyrimidine and vice versa
   a) Transition b) Frame-shift c) Transversion d) Deletion **(4×1=4)**

SECTION – B
(Answer **any eight**)

5. Write the significance of Nucleolus.

6. Comment on the enzymology of DNA replication.

7. Differentiate overlapping genes and interrupted genes.

P.T.O.

8. Write the role of centrioles in a cell.
9. Comment on Lamp Brush Chromosome.
10. Define codon and anticodon.
11. Write a note on Turner's syndrome.
12. Why DNA replication is said to be Semidiscontinuous ?
13. Write the functions of Lysosomes.
14. Comment on the origin of Mitochondria and Chloroplast.
15. What are transposons ? Write its characteristics.
16. Write a note on one gene-one polypeptide hypothesis. **(8×2=16)**

SECTION – C
(Answer **any four**)

17. Explain Messelson and Stahl experiment.
18. With labeled diagram explain the structure of mitochondria.
19. Explain the characteristics of Genetic code.
20. Explain the various types of chromosomes based on morphology.
21. Describe the important events that occur during Prophase I of Meiosis.
22. Explain Watson and Crick model of DNA. **(4×3=12)**

SECTION – D
(Answer **any one**)

23. Explain the structure and functions of Endoplasmic reticulum and Golgi apparatus.
24. Explain the gene regulation in Prokaryotes.
25. Explain the experiments which lead to the establishment of DNA as genetic material. **(1×8=8)**

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