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Reg. No. :

Name :

Fifth Semester B.Sc. Degree Examination, December 2022

First Degree Programme under CBCSS

Botany

Core Course

BO 1543 : CELL BIOLOGY, GENETICS AND EVOLUTIONARY BIOLOGY

(2014 – 2017 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions in **one** or **two** sentences. Each question carries **1** mark.

Write short notes on:

1. Cell wall
2. Heterochromatin
3. Rh factor
4. Complementary genes
5. B chromosomes
6. Chromosomal aberrations
7. Synapsis

P.T.O.

8. Speciation
9. Divergent evolution
10. Lamarckism

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** of the following. Each question carries 2 marks.

11. Comment on composition of cell wall.
12. Explain the functions of endoplasmic reticulum.
13. What are peroxisomes? Comment on its functions.
14. Which are the different types on chromosomes with respect to position of centromere?
15. Differentiate between back cross and test cross.
16. Explain recessive epistasis?
17. Briefly describe ABO blood group.
18. What is linkage of genes?
19. Give a brief account extra chromosomal inheritance.
20. Differentiate between micro and macroevolution?
21. Explain convergent evolution.
22. Enumerate the functions Golgi apparatus.

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** of the following questions.

23. Briefly explain the structure of nucleosomes.
24. Explain the genetics behind flower colour in *Mirabilis*.

25. Describe salivary gland chromosome with a neat diagram.
26. What is the significance of crossing over during cell division.
27. Briefly explain XX-XO and XX-XY system of sex determination.
28. Hemophilia is an inherited bleeding disorder-explain.
29. Explain Turner's syndrome.
30. Comment on the merits and demerits and Lamarckism.
31. Explain Weismann's theory of heredity.

(6 × 4 = 24 Marks)

SECTION – D

Write an essay on any **two** of the following. Each question carries **15** marks.

32. Explain numerical aberrations of chromosomes.
33. Explain with neat diagrams the structure of mitochondria and chloroplast.
34. Explain in detail maternal influence of inheritance citing coiling of shells.
35. Explain the role of mutation on evolution.

(2 × 15 = 30 Marks)
