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Fifth Semester B.Sc. Degree Examination, February 2021

First Degree Programme Under CBCSS

Botany

Core Course – VII

BO1543 – CELL BIOLOGY, GENETICS AND EVOLUTIONARY BIOLOGY

(2015 – 17 Admission)

Time : 3 Hours Max. Marks : 80

Draw diagrams wherever necessary.

SECTION – A

I. Answer **all** questions in **one** word to **two** sentences. **Each** question carries **1** mark.

1. Crossing over
2. Retrogressive evolution
3. Turner's syndrome
4. Mutation
5. Phenotypic ratio
6. Rh factor
7. Alleles

P.T.O.

8. Polyploidy

9. Heterochromatin

10. Test cross

(10 × 1 = 10 Marks)

SECTION – B

II. Answer **any eight** questions; not to exceed a paragraph. **Each** question carries **2** marks.

11. Nucleolus

12. Reasons for Mendel's success

13. B chromosomes

14. What are the blood groups in man?

15. Write a short note on mitochondria.

16. Inversion

17. Plastid inheritance in *Mirabilis*

18. Wiesman's theory of evolution

19. XX-XO mechanism of sex determination

20. Compare parallel and convergent evolution

21. Explain genetic drift

22. Y-linked inheritance in man

(8 × 2 = 16 Marks)

SECTION – C

III. Answer **any six** questions, not to exceed **120** words. **Each** question carries **4** marks.

23. Explain the role of speciation in evolution.

24. Discuss the sex determination in higher plants.

25. What is epistasis? Describe dominant epistasis.

26. Describe the structure of nucleus.

27. What do you mean by maternal influence? Explain the inheritance of shell coiling in snails.

28. Classify the chromosomes based on the position of centromere.

29. Describe the structure of chloroplast.

30. Describe Darwinism. Explain its merits and demerits.

31. Compare linkage and independent assortment.

(6 × 4 = 24 Marks)

SECTION – D

IV. Write essay on **any two** of the following, not more than three pages. **Each** question carries **15** marks.

32. Compare mitosis and meiosis. Mention their significance.

33. What is interaction of genes? Explain the inheritance of comb pattern in poultry.

34. Describe the role of hybridization in evolution.

35. Describe quantitative inheritance. Explain the inheritance of skin colour in man.

(2 × 15 = 30 Marks)
