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Reg. No. : .....

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Fifth Semester B.Sc. Degree Examination, December 2019

First Degree Programme under CBCSS

Botany

Core Course

BO 1543 : CELL BIOLOGY GENETICS AND EVOLUTIONARY BIOLOGY

(2014 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions in a word or in **one** or **two** sentences. Each question carries **1** mark.
Draw diagrams only if specified in the question.

1. What is Rh factor?
2. Who proposed the mutation theory?
3. Define law of segregation.
4. What is genetic drift?
5. What are mutagens?
6. Mention the function of peroxisome?
7. What is interference?

P.T.O.

8. Give two examples of sex linked inheritance.

9. Test cross ratio of a dihybrid.

10. Name two chemical mutagens.

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** questions. Each question carries **2** marks. Answer not exceed one paragraph

11. Explain incomplete dominance with suitable example.

12. What are complementary genes? Give one example.

13. Briefly explain XX-XO mechanism of sex determination.

14. Write short note on neo-Darwinism.

15. Differentiate heterochromatin and euchromatin.

16. Mention the location and functions of ribosomes.

17. Bring up the salient features of maternal inheritance.

18. Write short note on nucleosomes.

19. What are sex chromosomes?

20. Discuss Klinefelter's syndrome.

21. Distinguish allopatric and sympatric speciation.

22. Write short note on translocation.

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions. Each question carries **4** marks.

23. Discuss the type of interaction observed in leaf colour in paddy.

24. Explain prophase I of meiosis.

25. Briefly discuss Lamarckism.

26. What are polyploids? How allopolyploids are created? Give one example.

27. With suitable diagram, explain the fluid mosaic model of plasma membrane.

28. Using a dihybrid test cross ratio, how can you differentiate linkage and independent assortment?

29. What is polygenic inheritance? Explain with one example.

30. Write the role of hybridization in evolution.

31. Discuss sex determination mechanism in higher plants.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. Each question carries **15** marks.

32. What are multiple alleles? Enumerate the general characters and explain with suitable example.

33. Discuss various types of special chromosomes studied by you.

34. What is epistasis? Discuss with suitable examples.

35. Discuss the structure and functions of mitochondrion.

(2 × 15 = 30 Marks)
