

Reg. No. : .....

Name : .....

**Fourth Semester B.Sc. Degree Examination, May 2021.**

**Career Related First Degree Programme under CBCSS**

**Biotechnology (Multimajor)/ Botany and Biotechnology**

**Core Course**

**BB 1442/ BV 1442.1: Cell BIOLOGY, PLANT BREEDING AND  
EVOLUTIONARY BIOLOGY**

**(2013, 2015 – 18 Admn)**

Time : 3 Hours

Max. Marks : 80

**SECTION – A**

Answer **all** the questions in a word or **one or two** sentences.

Each question carries **1** mark

1. What do you mean by Cell theory?
2. Name the scientist who discovered the cell.
3. Who put forward the 'use and disuse' theory?
4. Name the accessory pigments found in photosynthetic plants.
5. Name the cell organelle found in sperm head, which helps to dissolve egg envelope.
6. What are Dictyosomes?
7. What do you mean by Quarantine?

8. What are Peroxisomes?
9. What do you mean by Retrogressive evolution?
10. What do you mean by Pedigree method used in breeding for disease resistance?

(10 × 1 = 10 Marks)

### SECTION – B

Answer **any eight** questions. Each question carries **2** marks  
Answer not to exceed **1** paragraph

11. How will you differentiate between Parallel and Convergent evolution?
12. What is Speciation? What are the forces acting behind it?
13. How Pureline selection differs from Mass selection?
14. What do you mean 'struggle for existence' and 'survival of the fittest'.
15. Differentiate between primary and secondary plant introduction with examples.
16. Give a note on Mutation breeding.
17. Give a note on B chromosomes.
18. Give as note on the various Chlorophyll pigments, their status and distribution.
19. Differentiate between Sympatric and Allopatric speciation.
20. What are Lamphrush chromosomes? How they are formed?
21. Give the functions of Golgi bodies.
22. Differentiate between Euchromatin and Heterochromatin.

(8 × 2 = 16 Marks)

## SECTION – C

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

Answer not to exceed **120** words

23. What is structural aberration of chromosomes? Which are the different types?
24. Explain Neo-Darwinism and its basic concepts.
25. What is Endoplasmic reticulum? What are its functions?
26. What are Salivary gland chromosomes? What are their features?
27. Describe the various numerical aberrations in chromosomes.
28. Which are the different types of hybridization? What are the steps involved?
29. Briefly describe the structure and functions of chloroplast.
30. Describe how carotenoids differ from phycobilins.
31. What do you mean Mutation theory? What are its important arguments?

(6 × 4 = 24 Marks)

## SECTION – D

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

Answer not to exceed **3** pages

32. Describe the structure and function of nucleus with the aid of a diagram.
33. Describe Darwin's theory of organic evolution and the natural forces which operate in it.
34. What is plant breeding? Describe its various objectives.
35. Describe the various cell organelles and their structure.

(2 × 15 = 30 Marks)