

Supple, Imp & Regular

B.Sc. Botany & Biotechnology
2019 Admn O/W

18/8/2023 AN

(Pages : 3)

R - 2503

Reg. No. :

Name :

Fourth Semester B.Sc. Degree Examination, July 2023
Career Related First Degree Programme under CBCSS

Botany and Biotechnology

Core Course VII

**BB 1442 : CELL BIOLOGY, PLANT BREEDING AND EVOLUTIONARY
BIOLOGY**

(2019 Admission onwards)

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 is meant by semi permeability?
2. What is pureline selection?
3. What is the role of microtubules in cell division?
4. Give any two functions of endoplasmic reticulum.
5. Define plasmodesmata.
6. What is euploidy?
7. Define photosynthetic unit.

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8. What are histone proteins?
9. What is nuclear pore complex?
10. Define convergent evolution.

(10 × 1 = 10 Marks)

SECTION – B

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

11. Write short note on significance of meiosis I.
12. What is heterosis?
13. State the postulates of cell theory.
14. Explain the concept of Neo-Lamarckism.
15. What is plant introduction?
16. Differentiate between heterochromatin and euchromatin.
17. Explain Weismann theory of evolution.
18. Comment on cell cycle check points.
19. Write the significance of aneuploidy.
20. What is genetic drift?
21. Explain the structural organization of ribosomes.
22. Illustrate ultrastructure of golgi apparatus.

(8 × 2 = 16 Marks)

SECTION – C

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

23. Describe unit membrane model of plasma membrane with suitable diagram.
24. Explain briefly various stages of mitosis.
25. Differentiate between progressive and retrogressive evolution.
26. Describe various structural aberrations in chromosome.
27. What are the objectives of plant breeding?
28. What is mutation breeding? Describe its method and applications.
29. Explain the role of structural organization of mitochondria in relation to its function.
30. Discuss the role of polyploidy in evolution.
31. Give a short account on special type of chromosomes with illustrations.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. **Each** question carries **15** marks. (Answer not to exceed **3 pages**)

32. With the help of suitable diagrams, explain various stages of meiosis.
33. Describe the nucleosome model of eukaryotic chromosome organization.
34. Explain various steps of hybridization in plants. Write its importance in plant breeding.
35. Explain embryological evidences of organic evolution.

(2 × 15 = 30 Marks)
