

**FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2024
(Regular/Improvement/Supplementary)**

BOTANY

**GBOT5B06T: CELL BIOLOGY, PALAEOBOTANY, PHYTOGEOGRAPHY &
EVOLUTION**

Time: 2 Hours

Maximum Marks: 60

**SECTION A: Answer the following questions. Each carries *two* marks.
(Ceiling 20 marks)**

1. Discuss the external features of *Rhynia*.
2. Differentiate between rough and smooth endoplasmic reticulum.
3. What is the importance of Gangetic plains?
4. Discuss the significance of Redi's and Spallanzani's experiment.
5. What do you mean by phytochoria?
6. What is discontinuous distribution? Write its phytogeographical causes.
7. What do you mean by nucleosome model?
8. Differentiate between habitat isolation and temporal isolation.
9. What is adaptive radiation? Give examples.
10. List out the major components of cytoskeleton.
11. What is glycocalyx? Write its significance.
12. Comment on endemism? List out the factors responsible for endemism.

**SECTION B: Answer the following questions. Each carries *five* marks.
(Ceiling 30 marks)**

13. Differentiate between descriptive phytogeography and dynamic phytogeography.
14. Describe the postulates of Darwinism. Discuss its merits and demerits.
15. Explain the major theories regarding origin of life.
16. Explain the structure of polytene chromosome.
17. Describe embryological and anatomical evidences of evolution.
18. Describe the vegetation of Eastern Himalayas.
19. Differentiate between metaphase chromosomes and interphase chromosomes.

SECTION C: Answer any *one* question. Each carries *ten* marks.

20. Define cell cycle. Explain different phases of cell cycle. Write an account on different stages of mitosis.
21. Explain the structure of *Williamsonia*. List out the contribution of Birbal Sahni and Savithri Sahni in Palaeobotany.

(1 X 10 = 10 Marks)