

M.Sc. (Botany) Semester—IV

BOTC-625 : PLANT MORPHOGENESIS

Time Allowed—3 Hours]

[Maximum Marks—50

Note :— Attempt all the Sections.

SECTION—A

Note :— Attempt all the parts. Answer to any part should not exceed 4 lines.

1. (a) Define genetic correlation.
- (b) Name the three aspects of polarity.
- (c) What is radial symmetry ?
- (d) Define physiological differentiation.
- (e) What is meristematic reconstitution ?
- (f) Define sectorial chimeras.
- (g) What are amorphous structures ?
- (h) Name some chemical morphogenetic factors in plants.

8×1=8

SECTION—B

Note :— Attempt any SEVEN questions. Answer to any question should not exceed 2 pages.

2. Explain the various physiological correlations that control plant growth and development.

3. Describe how polarity is expressed in plasmodia and coenocytes.
4. Briefly explain bilateral symmetry with suitable examples.
5. Discuss with suitable examples the differences between external and internal differentiation as expressed in structure.
6. Describe reproductive regeneration with suitable examples.
7. Write a note on Stock and Scion interrelationships in plants.
8. Explain abnormal development of organs during morphogenesis with suitable examples.
9. Discuss the role of light and water as morphogenetic factors affecting plant growth.
10. Write a note on differentiation during ontogeny.
11. Discuss regeneration in lower plants. 7×3=21

SECTION—C

Note :— Attempt any THREE questions. Answer to any question should not exceed 4 pages

12. Write short notes on :
 - (a) Dorsi-ventral symmetry
 - (b) Physiological manifestations of polarity.
13. Discuss the following :
 - (a) Restoration
 - (b) Differentiation without growth.

14. Explain the following :

(a) Somatic mutation

(b) Bi-electrical factors.

15. Discuss polarity as expressed in internal and external structures with suitable examples.

16. Explain the role of various physical morphogenetic factors in plant growth.

3×7=21