M.Sc. 3rd Semester Examination, 2024

BOTANY

PAPER – BOT-302.1 & 302.2

Full Marks : 50

Time : 2 hours

Answer **all** questions

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

PAPER : BOT-302.1

(*Plant Physiology*)

GROUP – A

Answer any **two** questions of the following : 2×2

1. What is meant by progressive senescence ?

2. Name two biochemical substances which block germination of embryo.

3. What is aquaporin ?

4. Name two receptors of ethylene.

GROUP – B

Write short notes on any **two**
from the following : 4×2

5. Use of synthetic regulatory compounds in agriculture.

6. Role of phytochrome in flowering.

7. SDGs and SAGs.

8. Biochemical changes during seed germination.

(**3**)

GROUP − C

Answer any **one** question from the following :

8×1

9. What are the types of blue light receptors in plants associated with photomorphogenesis ? Briefly describe the current models for IAA-induced H^+ extrusion in plants. $3 + 5$

10. What are the differences between channel and carrier proteins ? Discuss about the regulatory pathways in flower senescence. $3 + 5$

PAPER : BOT-302.2

(Biochemistry and Molecular Biology)

GROUP − A

Answer any **two** questions of the following : 2×2

11. Why are amino acids amphoteric in nature ?

12. What is Lineweaver-Burk plot ?

13. What are uronic acid and aldonic acid ?

14. Differentiate between tannin and pseudo-tannin.

GROUP – B

Write short notes on any **two** from the following : 4 × 2

15. Role of starch synthase.

16. Properties of chaperones.

17. Pharmaceutical use of alkaloids.

18. Carnitine shuttle.

(5)

GROUP – C

Answer any **one** question of the following : 8×1

19. Briefly describe the secondary structural elements of protein with suitable diagrams. Write a note on structure of nitrogenase. $4 + 4$

20. Derive Michaelis-Menten equation from steady state assumption for single substrate. Discuss about the different types of enzyme inhibition.

$4 + 4$

[Internal Assessment — 10 Marks]

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