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M.Sc. II[nd] Semester EXAMINATION, 2018

BOTANY

Paper – IV

(Plant Growth and Development)

Time: Three Hours
Maximum Marks: 80

PART – A (खण्ड – अ) *[Marks: 20]*

*Answer all questions (**50** words each).*

All questions carry equal marks.

*सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न का उत्तर **50** शब्दों से अधिक न हो।*

सभी प्रश्नों के अंक समान हैं।

PART – B (खण्ड – ब) *[Marks: 40]*

*Answer five questions (**250** words each).*

*Selecting **one** from each unit. All questions carry equal marks.*

*प्रत्येक इकाई से **एक–एक** प्रश्न चुनते हुए, कुल **पाँच** प्रश्न कीजिए।*

*प्रत्येक प्रश्न का उत्तर **250** शब्दों से अधिक न हो।*

सभी प्रश्नों के अंक समान हैं।

PART – C (खण्ड – स) *[Marks: 20]*

*Answer any **two** questions (**300** words each).*

All questions carry equal marks.

*कोई **दो** प्रश्न कीजिए। प्रत्येक प्रश्न का उत्तर **300** शब्दों से अधिक न हो।*

सभी प्रश्नों के अंक समान हैं।

PART – A

1. ANSWER ALL QUESTIONS:

   (i) What do you mean by imbibitions and give its two examples? Define Imbibitions pressure?

   (ii) Define guttation. What do you understand by apothem?

   (iii) Deficiency of which essential element is responsible for yellowing of leaves in plants?

   (iv) What do you understand by senescence? What are the probable causes of ageing?

   (v) Define growth. What is grand period of growth?

   (vi) What are the brassinosteriods? From which plant part it was first isolated?

   (vii) What do you meant by vernaliss?

   (viii) What is photo morphogenesis in plants?

   (ix) What do you mean by receptors?

   (x) What do you understand by second messenger?

PART – B

UNIT –I

2. Differentiate between chemical potential and water potential? Explain the concept of water potential and its components.

OR

3. What do you understand by ascent of sap? Discuss the Dixon and Joly's Theory of ascent of sap.

UNIT –II

4. What are essential elements? Write functions and deficiency symptoms of three micro nutrients in plants.

OR

5. Give a comparative account among ageing senescence and death. Explain mechanism and theories of senescence.

UNIT –III

6. Writ a brief note on biosynthesis and function of Jasmonic acid.

OR

7. What are cytokinins? Discuss physiological effects of cytokinins.

UNIT –IV

8. Elaborate the ABC model of floral development.

OR

9. What are cryptochromes? Briefly describe their properties and functions in plant growth and regulation.

UNIT –V

10. What do you mean by signal transduction? Describe briefly the role of calcium in cell signalling.

OR

11. What are tactic movements? Discuss the mechanism of seismonastic movement in Mimosa Pudica.

PART – C

12. Explain the potassium ion influx theory of stomatal movement.
13. Describe the various metabolic changes taking place during seed germination.
14. What do you mean by inhibitory hormone? Describe briefly the nature and physiological effects of ethylene.
15. Write a note on the phenomenon of photoperiodism in plants.
16. Give a concise account on signal transduction and gene expression.
