

Q.P. Code – 50829

Third Year B.Sc. Degree Examination

OCTOBER/NOVEMBER 2014

(Directorate of Distance Education)

Botany

**(DSC 291) Paper IV – PLANT PHYSIOLOGY, PLANT BREEDING AND
TISSUE CULTURE**

Time : 3 Hours]

[Max. Marks : 75/85

Instructions to Candidates :

- 1) *Students who have attended **25** marks **IA** scheme will have to answer for total of **75** marks.*
- 2) *Students who have attended **15** marks **IA** scheme will have to answer for total of **85** marks.*
- 3) ***One** mark questions should be answered in first two pages of the answer book.*
- 4) *Draw **neat** labelled diagrams **wherever** necessary.*
- 5) *Question No. **V** is **compulsory** for **85** marks scheme **only**.*

I. Simple Answer Questions :

Answer in a word or a phrase or a sentence :

10 × 1 = 10

1. What is osmosis?
2. What is lag phase?
3. Define callus.
4. What is selection?
5. Expand ABA.
6. Which organelle is called as 'power house of cell'?

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7. Mention any two micronutrients.
8. Who proposed Lecithin cycle theory?
9. What is Plant Breeding?
10. What is Tropic movement?

II. Short Answer Questions :

Write any **FIVE** of the following :

5 × 3 = 15

11. What do you know about vitamins?
12. Explain ringing experiment.
13. Draw a neat labeled diagram of chloroplast.
14. Explain cytochrome pump theory.
15. Give an account on grafting.
16. With the help of a neat labelled diagram explain 'hydathode'.
17. Give an account of dormancy.

III. Medium Answer Questions :

Answer any **FIVE** of the following :

5 × 6 = 30

18. Explain the role and deficiency symptoms of micronutrients.
19. Write the objectives and aims of tissue culture.
20. Explain the mechanism of T.C.T. theory – Ascent of sap.
21. What are phytohormones? Explain any two.
22. Explain any two mechanisms involved in stomatal movement.
23. Explain C_4 pathway.

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IV. Long Answer Questions :

Answer any **TWO** of the following :

2 × 10 = 20

24. Explain Mass selection.
25. Explain the steps involved in hybridization.
26. Explain photoperiodism in plants and add a note on vernalization.
27. Explain somatic embryogenesis. Add a note on its significance.

V. **Compulsory** Question for **85** marks scheme only :

Answer any **ONE** of the following :

1 × 10 = 10

28. Explain Tricarboxylic Acid cycle.
 29. List the advantages and disadvantages of transpiration.
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