

**Q.P. Code – 50829**

**Third Year B.Sc. Degree Examination, OCTOBER/NOVEMBER 2016**

**(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 **I-A** Scheme will have to answer for total of **75** marks.*
- 2) *Students who have attended **15** marks **I-A** 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.*

**I. Simple Answer Questions :**

**10 × 1 = 10**

Answer in a word or a phrase or a sentence :

1. Define T.P.
2. What is pure line?
3. Expand IBA.
4. What is macronutrient?
5. What is in-vitro condition?
6. Who proposed TCT theory?
7. What is transamination?
8. Name any one long day plant.
9. Which hormone is commonly called as fruit ripening hormone?
10. Define Root pressure theory.

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### II. Short Answer Questions :

5 × 3 = 15

Answer any **FIVE** of the following :

11. Explain the pressure flow theory.
12. What is Tissue culture? Mention the applications of Tissue culture.
13. Explain Guttation in brief.
14. What is Grafting? Explain wedge grafting.
15. What are the factors involved in dormancy of seed?
16. What is Hybridization? Mention their applications.
17. What is photoperiodism? Mention the importance.

### III. Medium Answer Questions :

5 × 6 = 30

Answer any **FIVE** of the following :

18. Explain the role of micronutrients and their deficiency symptoms in plants.
19. Explain the types of artificial propagation with any two examples.
20. What is Emasculation? Explain Hand Emasculation.
21. Explain the objectives of plant breeding.
22. Describe Tri carboxylic acid cycle.
23. Explain the mechanism of opening and closing of stomata.

### IV. Long Answer Questions :

2 × 10 = 20

Answer any **TWO** of the following :

24. Explain the theories of Metabolic absorption.
25. What is Nitrogen fixation? Explain the methods of Nitrogen fixation.
26. Write a note on organogenesis.
27. Explain the growth factors.

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

1 × 10 = 10

Answer any **ONE** of the following :

28. What is Vernalization? Explain mechanism and conditions of Vernalization.
29. What is plant breeding? Explain clonal selection and write their merits.