



DSC – 291

Third Year B.Sc. Degree Examination, September/October 2012

Directorate of Distance Education

BOTANY

Paper – IV : Plant Physiology, Plant Breeding and Tissue Culture

Time : 3 Hours

Max. Marks : 75/85

- Instructions :**
- 1) *Students who have attended 25 Marks IA Scheme will have to answer for total of 75 Marks.*
 - 2) *Students who have 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.

I. Simple answer questions :

Answer in **a word**, or **a phase** or **a sentence**.

(10×1=10)

- 1) What is sigmoid curve ?
- 2) Name root initiating hormone.
- 3) What is clonal selection ?
- 4) What is transamination ?
- 5) What is hypotonic solution ?
- 6) What is zeatin ?
- 7) What is dormancy ?
- 8) Define 'Totipotency'.
- 9) What are long day plants ?
- 10) What is seismonasty ?

P.T.O.



II. Short answer questions :

Write **any Five** of the following :**(5×3=15)**

- 11) Describe first and second law of thermodynamics.
- 12) Mention any three practical applications of gaseous hormone.
- 13) Describe the process of alcoholic fermentation.
- 14) Describe active absorption of water.
- 15) Differentiate vernalization and devernialization.
- 16) Write a note on pure line selection.
- 17) Describe CAM.

III. Medium answer questions.

Answer **any Five** of the following :**(5×6=30)**

- 18) Describe :
 - a) Gooty
 - b) Wedge grafting
- 19) What are macronutrients ? Explain deficiency symptoms of Nitrogen and Phosphorus.
- 20) What is translocation of organic solutes ? Describe Munch hypothesis.
- 21) Describe phototropism and geotropism.
- 22) Explain Donnan equilibrium.
- 23) Describe the role of plant breeding in developing new varieties of plants resistant to pests and diseases.



IV. Long answer questions :

Answer **any Two** of the following :

(2×10=20)

- 24) Describe Kreb's cycle.
- 25) Explain photorespiration.
- 26) Describe different types of photophosphorylation.
- 27) Explain interspecific hybridization.

V. (**Compulsory** question for **85** marks scheme only).

Answer **any ONE** of the following :

(10×1=10)

- 28) Describe practical applications and physiological role of cytokinins and ABA.
 - 29) Describe :
 - a) Organogenesis
 - b) Somatic embryo genesis.
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