

Ph.D. ENTRANCE EXAMINATION - 2013

FACULTY OF SCIENCES

BOTANY

Time: 140 Minutes

Maximum Marks: 160

*Note: Answer **any twelve** questions from Section **B** and **one** question from Section **C** in the subject concerned. In Section **B**, **each** question carries **10** marks. Section **C** carries **40** marks. In Section **B** an answer should not exceed **100** words. In Section **C**, an answer should not exceed **500** words.*

SECTION - B

1. Explain the impact of global warming on agricultural productivity.
2. C4 plants are considered as highly productive. Discuss this statement with suitable examples.
3. Describe various types of incompatibility and the methods to overcome this.
4. Describe the basic principles of tissue culture and explain various media used for tissue culture.
5. How would you link plant breeding with the modern concepts in plant biotechnology?
6. Write an account on the role of molecular biology in plant taxonomic studies.
7. Give a brief account of giant chromosomes.
8. Explain the natural system of classification and modern system of classification in plant taxonomy.
9. Explain the importance of statistical analysis in plant science research.
10. Define polyembryony. Write an account on the classification and types of polyembryony.
11. Explain the causes and effects of water pollution and add a note on control measures.
12. Describe the cytological and biochemical events involved in plant growth.
13. Elucidate the procedure of localization of nucleic acids and proteins in plant tissues using Histochemical staining.
14. Explain in detail about salinity stress and their impact on the physiology of plants.

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15. Describe the biosynthesis of protein in eukaryotic cells.
16. Give a brief account on alternation of generation in the lower forms.

SECTION - C

1. Chromatography is an inevitable technique in biological science research. Describe various types of chromatography. Add notes on the principles of the equipment used and procedure of separation.
2. Certain embryological features have been traditionally and most frequently applied in solving plant taxonomic problems. Write an account on these embryological characters and with examples describe the application of these embryological characters in solving disputes in plant taxonomy.
3. Write an account on transgenic plants. Add your comments on the social issues in the introduction of GM crops in India.
