

2012

BOTANY (Optional)

100702

वनस्पतीशास्त्र (वैकल्पिक)

Time : 3 hours

Maximum Marks : 200

Note :

- (i) Answers must be written in English only.
- (ii) Question No. 1 is compulsory. Of the remaining questions, attempt **any Four** by selecting one question from **each** section.
- (iii) Figure to the **RIGHT** indicates marks of the respective question.
- (iv) Number of optional questions upto the prescribed number in the order in which they have been solved will only be assessed. Excess answers will not be assessed.
- (v) Credit will be given for orderly, concise and effective writing.
- (vi) Illustrate your answers with suitable sketches wherever necessary.
- (vii) Candidates should not write roll number, any name (including their own), signature, address or any indication of their identity anywhere inside the answer book otherwise they will be penalised.

1. Answer **any four** of the following questions :

- (a) Give an account of normal secondary growth in perennial plants and its significance. **10**
- (b) Give salient features of Fungi and give classification by Alexopoulos. **10**
- (c) What is sterilization ? Describe the different methods of sterilization used in tissue culture laboratory and microbiology. **10**
- (d) Define plant succession. Describe the steps involved in hydrosere with diagrammatic presentation. **10**
- (e) Explain the mechanical tissues in plants and their distribution in monocot stem. **10**

SECTION - A

2. Answer the following questions :

- (a) Define cell cycle. Explain various phases of cell cycle and describe the importance of cell cycle in the mechanism of cell division. **20**
- (b) Describe various types of ploidy levels in plants. Give its role in crop improvement. **20**

3. Answer the following questions :

- (a) Describe ultrastructure and chemical composition of mitochondria. **20**
- (b) Define mass selection. Explain mass selection method of crop improvement. **20**

P.T.O.

SECTION - B

4. Answer the following questions :
- (a) What is Botanical Nomenclature ? Explain the rules and principles of botanical nomenclature with suitable examples. 20
 - (b) Describe structure and development of female gametophyte (embryo sac) and explain monosporic embryo sacs. 20
5. Answer the following questions :
- (a) Give an account of Engler and Prantl's system of plant classification with merits and demerits. 20
 - (b) What is an endosperm ? Describe the structure and different types of development of endosperms with their importance. 20

SECTION - C

6. Answer the following questions :
- (a) What is photophosphorylation ? Explain non-cyclic photophosphorylation and add a note on its significance. 20
 - (b) Define enzymes. Give classification of enzyme and add a note on 'Lock and key' theory of mechanism. 20
7. Answer the following questions :
- (a) What are plant growth regulators ? Give role and functions of Auxins in plant growth and development. 20
 - (b) What are C_3 plants ? Describe the various steps involved in Calvin's cycle. 20

SECTION - D

8. Answer the following questions :
- (a) What is somaclonal variation ? Describe significance of somaclonal variation. 20
 - (b) Give an account of energy flow in an ecosystem with suitable diagram. 20
9. Answer the following questions :
- (a) Describe plants used as human resources with respect to Botanical name, plant part used, active principles and uses 20
 - (i) Fibres
 - (ii) Beverages
 - (iii) Spices and condiments
 - (iv) Medicinal plants
 - (b) Define pollution. Describe sources of soil pollution. Add a note on control measures. 20