

1(CCE.M)2

Botany–II

(04)

Time : Three Hours]

[Maximum Marks : 300

INSTRUCTIONS

- (i) Answers must be written in English.
- (ii) The number of marks carried by each question is indicated at the end of the question.
- (iii) The answer to each question or part thereof should begin on a fresh page.
- (iv) Your answer should be precise and coherent.
- (v) The part/parts of the same question must be answered together and should not be interposed between answers to other questions.
- (vi) Candidates should attempt question nos. **1** and **5** which are compulsory and any **three** questions more out of the remaining questions, selecting at least **one** question from each section.
- (vii) If you encounter any typographical error, please read it as it appears in the text-book.
- (viii) Candidates are in their own interest advised to go through the General Instructions on the back side of the title page of the Answer Script for strict adherence.
- (ix) No continuation sheets shall be provided to any candidate under any circumstances.

- (x) Candidates shall put a cross (×) on blank pages of Answer Script.
- (xi) No blank page be left in between answer to various questions.
- (xii) No programmable Calculator is allowed.
- (xiii) No stencil (with different markings) is allowed.

SECTION–A

1. Write notes on any **three** in about 200 words each :
 - (a) Describe the ultrastructure of Eukaryotic cell.
 - (b) Polytene chromosomes.
 - (c) Meiosis as segregational division.
 - (d) Polyploidy and its role in Agriculture. 3×20=60
2. (a) Give structure of nucleic acids. 30
 - (b) What are the objectives of plant breeding ? Distinguish between Pedigree method and Bulk method. 30
3. (a) What is mutation ? Give its biological significance. 30
 - (b) Explain the process of organic evolution citing notable evidences. 30
4. (a) Describe the development and use of molecular markers in plant breeding. 30
 - (b) What is Test of significance ? Explain the role of z-test, t-test and chi-square test. 30

SECTION–B

5. Write detailed notes on any **six** of the following :
 - (a) DNA finger printing
 - (b) Role of RNA in evolution

- (c) CAM pathway as metabolic adaptation
- (d) Dormancy of seeds
- (e) Plant indicators and Bio-ores
- (f) IUCN categories
- (g) Growth substances
- (h) IPR and Biopatents. 6×10=60

6. (a) Explain the process of Lipid metabolism with special reference of glyoxylate pathway.
- (b) Explain the process of anaerobic respiration. Add a note on fermentation.
- (c) Give an account of plant movement. 3×20=60
7. (a) Explain the structure and function of extracellular matrix.
- (b) Explain the flow of energy in ecosystem.
- (c) What is agroforestry ? Explain its role in sustainable development. 3×20=60
8. (a) Give botanical sources of rubber. Explain the process of manufacture of rubber.
- (b) What is biodiversity ? Explain the steps involved in conservation of biodiversity.
- (c) What are botanical sources of essential oils ? Describe various processes of extraction of essential oils. 3×20=60