

**CSM : 15**

**BOTANY**  
**PAPER - II**

Time Allowed : 3 hours

Full Marks : 100

*Marks for each question is indicated against it.*

*Attempt any 5 (five) questions taking not more than 3 (three) questions from each Part.*

**PART A**

1. Write notes on any two of the following:- **(2×10=20)**
  - (a) Structure and functions of chloroplast
  - (b) Ultra-structure of a typical plant cell
  - (c) Cytoplasmic inheritance and male sterility
  
2. Write notes on any two of the following:- **(2×10=20)**
  - (a) Operon concept
  - (b) Theories of organic evolution
  - (c) Structural details of DNA
  
3. Answer any two of the following:- **(2×10=20)**
  - (a) Global warming and its consequences and mitigation
  - (b) Sustainable development
  - (c) Intellectual property rights
  
4. Write short notes on the following:- **(2×10=20)**
  - (a) Red data books
  - (b) Phytogeographical regions of India

**PART B**

5. Discuss the following:- (4×5=20)
- (a) DNA fingerprinting
  - (b) Roles of tetraploidy in plant breeding
  - (c) Transgenic crops
  - (d) Application of apomixis in plant breeding
6. Write notes on any two of the following:- (2×10=20)
- (a) Coefficient of variation
  - (b) Chi-square test
  - (c) Correlation and regression
7. Write an account on the following:- (2×10=20)
- (a) Deficiency symptoms of micronutrients in plants
  - (b) Calvin and Benson cycle of photosynthesis
8. Write short notes on any two of the following:- (2×10=20)
- (a) Electron transport chain in mitochondria
  - (b) Mechanism of biological Nitrogen Fixation in legumes
  - (c) Structure and function of Phytochrome

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