



SE – 180

VI Semester B.Sc. Examination, September 2020  
(CBCS) (F + R) (2016-17 & Onwards)

**BOTANY (Paper – VII)**

**Cytology, Genetics, Evolution and Plant Breeding**

Time : 3 Hours

Max. Marks : 70

**Instructions :** 1) Answer *all* Parts.

2) Draw diagrams *wherever* necessary.

**PART – A**

I. Explain/Define **any ten** of the following in **two to three** sentences : (10×2=20)

- 1) Centromere.
- 2) Back cross.
- 3) Inversion.
- 4) Layering.
- 5) Ratio of multiple factor.
- 6) Telocentric chromosome.
- 7) Euploidy.
- 8) Heterozygous condition.
- 9) Dicentric chromosome.
- 10) Clonal selection.
- 11) Karyotype.
- 12) Linkage.

**PART – B**

II. Write critical notes on **any four** of the following :

(4×5=20)

- 13) Synaptonemal complex.
- 14) Types of crossing over.
- 15) Apoptosis.

P.T.O.



16) Technique of hybridization.

17) In garden pea Red flower (R) is dominant over White (r).

When red flower parent is crossed with the white flower parent, find out phenotype and genotype of  $F_1$  and  $F_2$ .

18) Maintenance of germplasm.

### PART - C

III. Give a comprehensive account of **any three** of the following : **(3×10=30)**

19) Biography of Mendel.

20) Meiosis - I.

21) (A) Translocation (B) Duplication.

22) Sex determination in melandrium.

23) Selection.

---



SE – 181

VI Semester B.Sc. Examination, September 2020  
(CBCS) (F + R) (2016-17 and Onwards)  
**BOTANY – VIII**  
**Plant Physiology – II**

Time : 3 Hours

Max. Marks : 70

- Instructions:** 1) Answer **all** Parts.  
2) Draw diagrams **wherever** necessary.

**PART – A**

A. Explain/Define **any ten** of the following in **two** or **three** sentences. **(10×2=20)**

- 1) Coenzyme.
- 2) Name 2 free living nitrogen fixing bacteria.
- 3) What is an active site ?
- 4) What is photorespiration ? Mention its organelles.
- 5) What is Emerson enhancement effect ?
- 6) What is terminal oxidation ?
- 7) What is sigmoid curve ?
- 8) Name any 2 synthetic plant hormones.
- 9) What is phytochrome ? Mention its function.
- 10) Mention the causes of seed dormancy.
- 11) What is seismonastic movement ? Give an example.
- 12) What is hydrotropism ?

**PART – B**

B. Explain critical notes on **any four** of the following. **(4×5=20)**

- 13) Competitive and feed back inhibition of enzyme action.
- 14) Classification of enzymes based on function.

P.T.O.



- 15) Explain ultrastructure of chloroplast with a neat labelled diagram.
- 16) Respiratory quotient and its significance.
- 17) Phototropism.
- 18) Physiological effects and practical applications of ethylene.

### PART - C

C. Give a comprehensive account of **any three** of the following. **(3×10=30)**

- 19) Nitrogen cycle.
  - 20) Explain :
    - a) Induced fit theory.
    - b) Allosteric regulation.
  - 21) Explain Kreb's cycle.
  - 22) Factors affecting photosynthesis.
  - 23) Physiological effects and practical applications of auxins.
-