

Botany XII

SET I

1] Very short questions. (Attempt any seven)

(7 × 1 = 7)

- a) Define genotype.
- b) What do you understand by self-fertilization?
- c) What do you understand by apical dominance?
- d) What is photophosphorylation?
- e) What is triple fusion?
- f) Define entomophily.
- g) Why is emasculation done during hybridization?
- h) Define dendrochronology.
- i) What do you understand by close vascular bundle?
- j) Name the molecular scissor and molecular glue.

2] Short questions. (Attempt any five)

(5 × 3 = 15)

- a) Describe the Mendel's law of segregation.
- b) What is genetic code? Point out its characteristics.
- c) Describe the modification of parenchyma tissue.
- d) Differentiate between C₃ and C₄ plants.
- e) Define biotechnology. Mention its application.
- f) Mention the characteristics features of anemophilous plants.
- g) Describe the role of gibberellins in plants.

3. Describe the anatomical feature of dicot stem with well labeled diagram and show the differences with monocot stem.

7.5

Or

What is transpiration? Mention its types. Describe the mechanism of stomatal transpiration.

4. What is sex-linked inheritance? Describe it with reference to eye colour of *Drosophila*. **8**

SET II

1] Very short questions. (Attempt any seven)

(7 × 1 = 7)

- a) What is cambium?
- b) Write the type of vascular bundle found in dicot stem.
- c) Define crossing over.
- d) Write two differences between DNA and RNA.
- e) What happens when a plant cell is placed in hypotonic solution?
- f) Name the plant growth hormone responsible for ripening fruit.
- g) Define grafting.
- h) Define the term cleistogamy.
- i) What is heterosis?
- j) Name the micro-organisms used in alcoholic fermentation.

2] Short questions. (Attempt any five)

(5 × 3 = 15)

- a) Describe the process of glycolysis.
- b) What is incomplete dominance? Describe with a suitable example.
- c) Write about advantages and disadvantages of self pollination.
- d) Mention the process of plant tissue culture.
- e) Describe the external factors of transpiration.
- f) Draw a well labelled diagram of embryo formation in dicots.
- g) Differentiate between xylem and phloem.

3. Describe the internal structure of dicot root with the help of well labelled diagram.

Differentiate between dicot root and monocot root.

7.5

Or

Define photosynthesis. Give an experiment to demonstrate that carbon dioxide is necessary for photosynthesis.

4. Describe the "Mendel's law of inheritance."

8

SET III

1] Very short questions. (Attempt any seven)

(7 × 1 = 7)

- a) What is promeristem?
- b) Define epinasty.
- c) Define genetic code.
- d) Define callus.
- e) What is scion?
- f) Define exon.
- g) What is cloning vehicle?
- h) Write full form of ATP.
- i) What is imbibition?
- j) Define biofertilizers.

2] Short questions. (Attempt any five)

(5 × 3 = 15)

- a) Describe the different types of vascular bundles.
- b) Differentiate between aerobic and anaerobic respiration.
- c) Draw a well labelled diagram of L.S of ovules and describe it.
- d) Mention the significances of genetic engineering.
- e) Describe Lac Operon concept of gene regulation.
- f) Describe chromosomal aberration in brief.
- g) Describe the process of male gametogenesis in plant.

3. Describe the internal structure of monocot stem with well labelled diagram and show differences with dicot stem.

7.5

Or

Define photosynthesis. Describe the light dependent steps of photosynthesis in detail.

4. Define replication. Describe the mechanism of DNA replication in detail.

8

SET IV

1] Very short questions. (Attempt any seven)

(7 × 1 = 7)

- a) What is plasmolysis?
- b) Define gootee.
- c) Name the type of vascular bundle found in monocot stem.
- d) What do you understand by endarch xylem?
- e) What is geitonogamy?
- f) What is gene pool?
- g) Define phototaxis.
- h) Define linkage.
- i) Define explant.
- j) What are green manures?

2] Short questions. (Attempt any five)

(5 × 3 = 15)

- a) Describe micro-gametogenesis process.
- b) Why did Mendel select pea plant for his hybridization experiments?
- c) Differentiate between parenchyma and collenchyma.
- d) Mention the advantages and disadvantages of vegetative propagation.
- e) Describe the mechanisms of crossing over.
- f) Describe co-dominance with a suitable example.
- g) Mention the roles of auxin in plants.

3. Define secondary growth. Discuss the process of secondary growth in dicot stem.

7.5

Or

Define respiration. Describe the different steps of Embden-Meyerhof-Parnas pathway.

4. Define mutation. Describe the various methods of mutation.

8

SET V

1] Very short questions. (Attempt any seven)

(7 × 1 = 7)

- a) Define emasculation.
- b) Define anemophilous.
- c) Define root pressure.
- d) Define stock and scion.
- e) What is an operon?
- f) What is hybridoma technology?
- g) What happens when a plant cell is placed in a hypertonic solution?
- h) What is a test cross?
- i) What are C₄ plants?
- j) What are the assimilatory powers?

2] Short questions. (Attempt any five)

(5 × 3 = 15)

- a) Write short note on green manures with suitable examples.
- b) Anatomically differentiate dorsiventral and isobilateral leaf.
- c) Mention the roles of cytokinin in plants.
- d) Write down the significances of osmosis.
- e) Describe the characteristics of genetic code.
- f) What the advantages and disadvantages are of cross pollination?
- g) Write down the differences between photosynthesis and respiration.

3. Describe the internal structure of monocot root with well labelled diagram and show differences with dicot root.

7.5

Or

What is ascent of sap? Describe the various theory of ascent of sap.

4. What is gene? Give an experiment to demonstrate that DNA is a genetic material. **8**