

B.Sc. Semester - 4 (CBCS) Examination
March/April-2024 [OLD COURSE]
BOTANY (CORE)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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- Que.1(A) Answer in very short. (any three) (03)
- (1) When tissue facilitates secondary growth in dicot plants?
 - (2) Complete the statement: In the anatomy of a monocot leaf, the vascular bundles are arranged in a _____ pattern.
 - (3) Define the term: Intra fascicular cambium
 - (4) State the types of V.B. in Maize stem.
 - (5) True or false: Secondary growth in dicot stem anatomy is primarily facilitated by the activity of the vascular cambium.
- Que.1(B) Answer in brief. (any one) (04)
- (1) Explain: Formation of cambium ring in Dicot stem.
 - (2) Distinguish between: Dorsiventral leaf and Isobilateral leaf.
- Que.1(C) Answer in detail. (any one) (07)
- (1) Describe with diagram: Anomalous secondary growth in Bignonia stem.
 - (2) Draw V.T.S. of monocot root and describe its structure.
- Que.2(A) Answer in very short. (any three) (03)
- (1) Where does megasporogenesis occur in plants?
 - (2) In what region of the ovule does the development of the embryo sac typically occur?
 - (3) Complete the statement: The primary outcome of microgametogenesis in plants is.....
 - (4) True or False: The two products of double fertilisation are the zygote and the triploid endosperm nucleus.
 - (5) How does the pollen tube grows in solid style?
- Que.2(B) Answer in brief. (any one) (04)
- (1) Explain: Formation of male gametes in Microgametogenesis.
 - (2) Discuss the entry of pollen tube into ovule with diagram.
- Que.2(C) Answer in detail. (any one) (07)
- (1) Enumerate with the help of labelled illustrations the variation in Chrysanthemum type of embryo sac.
 - (2) Discuss with diagram: Steps of megasporogenesis.
- Que.3(A) Answer in very short. (any three) (03)
- (1) What role do mycorrhizal fungi play in mineral absorption by plants?
 - (2) Give the term: The solid adsorbent particles which cause imbibition are called.
 - (3) What environmental factors can induce seed dormancy?
 - (4) Which plant hormone is involved in regulating the vernalization process?
 - (5) What is the process called by which organic solutes move from sources to sinks in plants?
- Que.3(B) Answer in brief. (any one) (04)
- (1) Explain Munch mass flow hypothesis.
 - (2) Discuss any two methods of breaking seed dormancy.

- Que.3(C) Answer in detail. (any one) (07)
- (1) What is osmosis? Discuss the Exosmosis with experiment.
 - (2) Describe mechanism of vernalization in plants.
- Que.4(A) Answer in very short. (any three) (03)
- (1) What is a soil profile?
 - (2) What are the primary causes of soil erosion?
 - (3) Define the term: Remote sensing
 - (4) Why is soil conservation important?
 - (5) Name the process: The soil is covered with dried grasses, leaves and other crop residues.
- Que.4(B) Answer in brief. (any one) (04)
- (1) Explain the soil profile with principal horizons.
 - (2) Write notes on: Applications of remote sensing.
- Que.4(C) Answer in detail. (any one) (07)
- (1) What is Pedogenesis? Describe the process of Pedogenesis.
 - (2) Discuss the various mechanical methods used for the soil conservation.
- Que.5(A) Answer in very short. (any three) (03)
- (1) True or false: Artificial seeds are produced through natural seed development processes
 - (2) Give the term: A polyploidy having chromosome set from same species
 - (3) What is a plant herbarium?
 - (4) By which other names pure-line selection is known?
 - (5) Which material is used in Encapsulation?
- Que.5(B) Answer in brief. (any one) (04)
- (1) Write notes on: Collection and pressing in Herbarium technique
 - (2) Explain cytoplasmic inheritance in *Mirabilis jalapa*.
- Que.5(C) Answer in detail. (any one) (07)
- (1) Discuss allopolyploidy in detail with examples.
 - (2) Describe the procedure of Pure-line selection.
