Seat No. _____

HK-003-1014006

B. Sc. (Sem.-IV) (CBCS) Examination

April - 2023

B-401 : Botany

(Study of Plants With Reference to Anatomy, Embryology, Physiology, Ecology & Application)

(Old Course)

Time : $2\frac{1}{2}$ Hours / Total Marks : **70**

Instructions :

(1) Write answers of all questions in main answer book.

(2) Draw neat and labelled diagrams wherever necessary.

1 (a) Objective type questions: **4**

(1) Define term – Cambium.

(2) Radial vascular bundles occur in _____.

(3) Name the structure that surrounds Vascular Bundle.

(4) In Dicot roots, what is the number of radial Vascular Bundle.

(b) Answer in brief : (any 1 out of 2) **2**

(1) Distinguish between : Monocot and Dicot root (any two points).

(2) Define – Interxylary Phloem.

(c) Answer in detail : (any 1 out of two) **3**

(1) Describe : Vascular strand in Monocot stem.

(2) Write notes on : Annual Rings.

(d) Write a note on : (any one out of two) **5**

(1) Describe with diagram : Anomalous secondary growth in Dracena stem.

(2) Describe with diagram – Dicot root.

2 (a) Objective type questions : **4**

(1) The entry of the pollen tube into the ovule through micropyle eight nucleate is called _____.

(2) Define : Syngamy.

(3) Functional megaspore in a flowering plant develops into _____

(4) Write the name of plants (any two examples). which are found in Monosporic Embryo sac ?

(b) Answer in brief : (any 1 out of 2) **2**

(1) Give in brief the Embryo sac Development in Polygonum.

(2) Define Vegetative cell and Generative cell.

(c) Answer in detail : (any 1 out of 2) **3**

(1) Describe short note on Biosporic embryo sac.

(2) Explain the Entry of Pollen tube into Embryo sac.

(d) Write a note on : (any 1 out of 2) **5**

(1) Describe the Development of Male Gametophy in Angiosperm.

(2) Explain in detail Double Fertilization in Angiosperm plants and with its significance.

3 (a) Objective type questions : **4**

(1) Define : Passive Absorption.

(2) Define : Vernalization.

(3) Define : Imbibition.

(4) What is DPD ?

(b) Answer in brief : (any 1 out of 2) **2**

(1) Write Advantage of Seed Dormancy.

(2) Write short note on Donnan Equilibrium.

(c) Answer in detail : (any 1 out of 2) **3**

(1) Explain : Iron Exchange Theory.

(2) Distinguish between Osmosis and Imbibition.

(d) Write a note on : (any 1 out of 2) **5**

(1) Describe mechanism of Vernalization.

(2) Explain mechanism of Trance location of organic solutes.

4 (a) Objective type questions : **4**

(1) Define : Pedology.

(2) What is Hygroscopic water ?

(3) What is Soil Profile ?

(4) What is Soil Conservation ?

(b) Answer in brief " (any one out of two) **2**

(1) Explain principles of Remote sensing.

(2) Write notes on " Mulching."

(c) Answer in detail : (any 1 out of 2) **3**

(1) How the crop rotation is useful for the Soil Fertility ?

(2) What is Biological Weathering ?

(d) Write a note on : (any 1 out of 2) **5**

(1) What is Soil Erosion ? Describe the various forms of water Erosion.

(2) What is Soil Profile ? Discuss five horizons of soil.

5 (a) Objective type questions : **4**

(1) What is Herbarium ?

(2) True or False ? Vasculum is a plant preservative.

(3) What is Mass selection ?

(4) Write example of Alotetraploids.

(b) Answer in brief : (any 1 out of 2) **2**

(1) Give difference between Natural seed and Synthetic seed.

(2) Define Artificial seed.

(c) Answer in detail : (any 1 out of 2) **3**

(1) Explain significance of Polyploidy.

(2) Write notes on Mass Selection in plant breeding.

(d) Write a note on : (any 1 out of 2) **5**

(1) Explain : Cytoplasmic Inheritance in Yeast.

(2) Explain : Cytoplasmic Inheritance in *Mirabilias Jalapa*.