



RAK-003-1014006

Seat No. _____

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

March / April - 2019

Botany : B-401

(Anatomy, Embryology, Physiology, Ecology & Application)

Faculty Code : 003

Subject Code : 1014006

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :**
- (1) This question paper contains five questions. All questions carry equal marks.
 - (2) Write answers of all the questions in main answer sheet.
 - (3) Draw neat and labelled diagrams wherever necessary.
 - (4) Figures to the right side indicate full marks for the question.

- 1 (a) Objective type questions : 4
- (1) What do you mean by anomalous ?
 - (2) In dicot plants, the thickness of stem or root increase by activity of_____.
 - (3) Why secondary growth in *Dracaena* is anomalous ?
 - (4) Which types of tissues are produced in secondary growth ?
- (b) Answer in brief : (any one) 2
- (1) Define the secondary growth.
 - (2) Write about dicot root anatomy.
- (c) Answer in detail : (any one) 3
- (1) Give the differences between monocot and dicot stem anatomy (any six)
 - (2) Draw a labelled diagram of T.S. of dicot leaf.

- (d) Write a note on : (any one) 5
- (1) Describe secondary growth in sunflower stem.
 - (2) Explain the anomalous secondary growth in *Bignonia* stem.
- 2** (a) Objective type questions : 4
- (1) The branch of botany which deals with the study of formation, growth and development of a new individual from an egg is known as
 - (2) What is double fertilization ?
 - (3) True or false : Double fertilization is characteristic of angiosperm.
 - (4) Give the example of Monosporic eight nucleate embryo sac.
- (b) Answer in brief : (any one) 2
- (1) Give the names of components of ovule.
 - (2) What is porogamy and chalazogamy?
- (c) Answer in detail : (any one) 3
- (1) Draw a labelled diagram of development of male gametophyte.
 - (2) Describe in brief about Megasporogenesis.
- (d) Write a note on : (any one) 5
- (1) Describe types of embryo sac.
 - (2) Explain double fertilization in detail.
- 3** (a) Objective type questions: 4
- (1) Define Diffusion.
 - (2) State any two significance of imbibition.
 - (3) Translocation of solutes primarily taken place through _____.
 - (4) According to hormonal theory, vernalization involves the formation of a floral hormone called _____.

- (b) Answer in brief : (any one) 2
- (1) Explain the types of osmosis in brief.
 - (2) Write a note on ion exchange theory.
- (c) Answer in detail : 3
- (1) What is vernalization ? Write the significance of vernalization.
 - (2) Write short note on Munch hypothesis.
- (d) Write a note on : (any one) 5
- (1) Explain mechanism of transport of organic solutes through phloem.
 - (2) Describe seed dormancy in detail.
- 4 (a) Objective type questions : 4
- (1) Biologists celebrate 5th June as _____.
 - (2) The kind of soil water most useful to plant is _____.
 - (3) True or False : B horizon is also called as sub soil.
 - (4) What is soil erosion ?
- (b) Answer in brief : (any one) 2
- (1) Differentiate Mor and Mull humus.
 - (2) Give the brief idea about soil texture.
- (c) Answer in detail : (any one) 3
- (1) Draw labelled diagram of soil profile.
 - (2) Write any two methods of soil conservation.
- (d) Write a note on : (any one) 5
- (1) What is soil ? Describe soil formation process in detail.
 - (2) Write an essay on remote sensing.

- 5 (a) Objective type questions : 4
- (1) Write the names - types of artificial seeds.
 - (2) Write the measurement (size) of typical herbarium sheet.
 - (3) Who coined the term pure line ?
 - (4) True or False : The mitochondrial DNA can't be written as mt DNA.
- (b) Answer in brief : (any one) 2
- (1) Write advantages of mass selection.
 - (2) Which cell organelle is involved in cytoplasmic inheritance in yeast and how it occurs ?
- (c) Answer in detail : (any one) 3
- (1) Describe the Allopolyploids.
 - (2) Explain dropping method in artificial seeds.
- (d) Write a note on : (any one) 5
- (1) Describe the herbarium technique in detail.
 - (2) Explain cytoplasmic inheritance in *Mirabilis jalapa* or four o'clock plant.
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