



M. Sc. (Part - I) (Sem. II) Examination

April/May - 2016

Botany : CBO - 404

(Angiosperm Taxonomy & Plant Reproduction)

Time : 3 Hours] [Total Marks : 70

Instructions : (1) The question paper consists of two

section, each has three questions.

(2) All questions are compulsory. In each

section first two questions carry 14

marks and last question carry 7 marks.

(3) There is no overall choice. However,

an internal choice has been provided

in each question.

(4) Write answer of each Section in

separate answer sheet.

(5) Illustrate your answers with necessary

diagrams, if required.

SECTION - I

1 Answer the following : (two out of three) each of 14
7 marks.

(1) Mention merits and demerits of Takhtajan's

classification system.

(2) Discuss on anatomy and palynology as a

taxonomic evidence.

(3) Explain the role of computers and GIS in

plant taxonomy.

PPP-2052]

1

[Contd...

- 4 Answer the following : (two out of three) each
of 7 marks. 14
- (1) Describe the ovules and megasporogenesis.
 - (2) Write a detailed account on scope of palynology.
 - (3) Discuss on the formation of vegetative and generative cells.

SECTION - II

- 3 Answer the following : (four out of six) each
02, 02, 02 and 01 marks. 7
- (1) Write the demerits of Bassae's classification system.
 - (2) Explain in short : Floras.
 - (3) What is the ideal size of herbarium ?
 - (4) Write the two scientific name of economic impotent plants of *Lamiaceae*.
 - (5) Draw the floral diagram of *Euphorbiaceae*.
 - (6) What do you mean by polypetalae ?

- 2 Answer the following : (three out of five) each
of 05, 05 and 04 marks. 14
- (1) State the general characters of family *Convolvulaceae*.
 - (2) Compare the floral characters of *Capparidaceae* and *Cactaceae*.
 - (3) Classify the systematic position of *Nyctaginaceae*.
 - (4) Write the economical importance of *Rutaceae*.
 - (5) Mention the floral variation of *Cyperaceae*.

- 5 Answer the following : (three out of five) each 14
of 05, 05 and 04 marks.
- (1) Explain in brief : *In vitro* pollen germination.
 - (2) Define the double fertilization and explain in detail.
 - (3) Explain the nutrition phenomenon of embryo sac.
 - (4) Describe the development of Crucifer type of embryo.
 - (5) Write the structure and development of cellular endosperm.
- 6 Answer the following : (four out of six) 7
each 02, 02, 02 and 01 marks.
- (1) Write the main difference between P-tapetum and C-tapetum.
 - (2) Explain pollen wall features.
 - (3) Define : Microsporangensis.
 - (4) State the tests for the pollen viability.
 - (5) Mention the name of the types of endosperm development.
 - (6) What do you mean by polyembryony ? 1



PPP-2085

Seat No. _____

M. Sc. (Sem. II) Examination

April / May - 2016

EBO-405 : Botany

(Plant Tissue Culture)

Time : Hours]

[Total Marks : 50

Instructions : (1) There are two sections in this question paper.

(2) Each section contains two questions and carries 25 marks.

(3) Write answer of each SECTION in separate answer book.

SECTION - I

- 1 (a) Describe any two in detail : 10
- (1) Chemical sterilization of techniques.
 - (2) History of plant tissue culture.
 - (3) Major stages involved in micro-propagation.
- (b) Discuss any two : 6
- (1) Steam sterilization.
 - (2) Methods for protoplast fusion.
 - (3) Types of culture.
 - (4) Role of pH vitamins in nutrition medium.

PPP-2085]

1

[Contd...

- 3 (a) Describe any two in detail :
 (1) Gene bank.
 (2) Artificial seed production
 (3) Secondary metabolites and their types.
 (b) Discuss any two :
 (1) Herbicide resistance.
 (2) Edible vaccine production
 (3) Pathogen resistance
 (4) Bioplastic

10

6

SECTION - II

- 2 Answer any five in short :
 (1) Write full form of IBA.
 (2) Define : Micro-propagation.
 (3) Give full form of MS.
 (4) Define : Somatic hybridization.
 (5) Explain : Totipotency
 (6) Explain : Explant
 (7) Write function of Laminar air flow.

5

general laboratory and media preparation.

- 4 (c) Answer any two in short :
 (1) Principles of Autoclave.
 (2) Role of Vitamins in nutrition medium.
 (3) Scope of plant tissue culture.
 (4) Equipment items essential for

- 4 Answer any two in short :
- (1) Salt stress resistance plant.
 - (2) Significance of germplasm storage.
 - (3) Importance of clonal propagation.
 - (4) Phytoalexin.
- 4 Answer any five in short :
- (1) Write full form of TTC.
 - (2) Explain : Antibody
 - (3) Give name of Bio-degradable plant.
 - (4) Define : Pathogen
 - (5) Write full form of PHB.
 - (6) Explain : Cryopreservation
 - (7) Write full form of DMSO.



PPP-2063

Seat No. _____

M. Sc. (Sem. II) Examination

April/May - 2016

Botany : CBO - 405

(Plant Anatomy & Ecology) (Old Course)

(CC)

Time : 3 Hours] [Total Marks : 70

Instructions : (1) The question paper consists of two

section, each has three questions.

(2) All questions are compulsory. In each

section first two questions carry 14

marks and last questions carry 7

marks.

(3) Write answer of each section in

separate answer sheet.

(4) Illustrate your answers with necessary

diagrams, if required.

SECTION - I

1 Answer the following : (any two) 14

(1) Explain histogenic layer theory.

(2) Describe the Korper-Kappe theory.

(3) Describe the Transition of vegetative shoot

apex into reproductive shoot apex.

2 Answer the following : (any three) each of 5, 5 14

and 4 marks.

(1) Describe the role of combium in wound healing

and grating.

- 5 Answer the following : (any three) each of 5, 5, and 4 each. 14
- (1) Describe : Phytogeographical region of world.
 - (2) Describe : Phyto remediation
 - (3) Explain the Biosphere reserve areas
 - (4) Write in short : Terrestrial biomass
 - (5) Write on National Parks.
- 4 Answer the following : (any two) 14
- (1) Describe : Carbon Cycle
 - (2) Explain : Sustainable Development
 - (3) Describe : Non-conventional energy sources.

SECTION - II

- 3 Answer the following : (any four) each of 2, 2, 2 and 1 marks. 7
- (1) Write in short : Apical cell theory ? 2
 - (2) What is the concept of quiescent centre ? 2
 - (3) Define : Heart wood. 1
 - (4) Write the cambium in monocotyledons ? 2
 - (5) Write in short : Flower Anatomy. 2
 - (6) Define : Anomalous secondary growth. 1
- (2) Describe the Anomalous secondary growth in Boygainvillea stem.
- (3) Write the internal structure of maize leaf.
 - (4) Write on nodal anatomy.
 - (5) Compare the structural variability between Aloe and Typha leaves.

6. Answer the following : (any four) each of 2, 2, 2 and 1 marks.
- (1) Define : Plant Community. 2
 - (2) Define : Productivity 2
 - (3) What is Eco-terrorism ? 1
 - (4) Define : Aquatic biomass. 2
 - (5) Write the importance of forest conservation. 2
 - (6) Write the application of environment clean up. 1



PPP-2074

Seat No. _____

M. Sc. (Sem. II) Examination

April / May - 2016

Botany : CBO - 406

(Biophysics, Instrumentation & Biochemistry)

Time : 3 Hours]

[Total Marks : 70

Instructions : (1) The question paper consists of two

sections, each has three questions.

(2) All questions are compulsory and

internal choice is provided.

(3) Write each section in separate answer

sheet.

(4) Illustrate your answers with necessary

diagrams.

SECTION - I

1 Answer the following : (two out of three) 14

(i) Write a note on Buffers by giving example of biological system.

(ii) Describe laws of thermodynamics.

(iii) Explain various types of radiation and their effects on plants.

2 Answer any three out of five each of 05, 05 and 04 marks. 14

(i) Explain scanning and transmission electron microscopy.

(ii) Write note on colorimetry.

(iii) Write note on Agarose gel electrophoresis.

(iv) Describe thin layer chromatography.

(v) Describe principles of ion exchange chromatography.

PPP-2074] 1 [Contd...

- 3 Answer any four out of six each of 02, 02, 02 and 01 marks.
- (i) What is P^H and P^H scale ? 2
 - (ii) What are charge transfer complex ? 2
 - (iii) What is entropy and enthalpy of system ? 2
 - (iv) Define radioactive isotopes. 2
 - (v) Define partition chromatography. 2
 - (vi) What is resolution front ? 1
 - (vii) Define the term optical density. 1
- 4 Answer any two out of three : 14
- (i) Describe structure, properties and function of polysaccharide. 14
 - (ii) Explain briefly Complex lipids. 14
 - (iii) Give the classification of amino acid. 14
- 5 Answer any three out of five : 14
- (i) Write note on structural confirmation of various proteins. 5
 - (ii) Describe various kind of enzyme inhibition. 5
 - (iii) Give nomenclature and classification of enzymes. 5
 - (iv) Describe any two fat soluble vitamins. 4
 - (v) Write note of DNA structure and components. 4

SECTION - II

- 6 Answer any four out of six each of 02, 02, 02 and 01 marks. 7
- (i) Define Dissociation constant. 2
 - (ii) What is isomerism? 2
 - (iii) Name two diseases occur due to deficiency of vitamin C. 2
 - (iv) What are essential and non-essential amino acids? 2
 - (v) Define phospholipids. 1
 - (vi) What are Coenzymes? 1