

**FIRST SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY)
EXAMINATION, NOVEMBER 2020**

(CBCSS)

Botany

BOT 1C 03—ANGIOSPERM, ANATOMY, ANGIOSPERM EMBRYOLOGY, PALYNOLOGY
AND LAB TECHNIQUE

(2019 Admissions)

Time : Three Hours

Maximum : 30 Weightage

General Instructions

1. *In cases where choices are provided, students can attend **all** questions in each section.*
2. *The minimum number of questions to be attended from the Section / Part shall remain the same.*
3. *There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.*

Part A

*Answer any **four** questions.
Each question carries 2 weightage.*

1. Explain the process of maceration
2. Give an account on mounting media.
3. Describe aeropalynology.
4. Write an account on the unidirectional activity of cambium.
5. Describe the process of fertilization in a dicot embryo sac.
6. Explain the role of cambium in wound healing and grafting.
7. Explain with diagram the structure of a typical monocot embryo.

(4 × 2 = 8 weightage)

Part B

*Answer any **four** questions.
Each question carries 3 weightage.*

8. Give an account on *in vitro* pollination and fertilization.
9. Explain the tools used in deducing microscopic measurements.
10. Describe the working of a rotary microtome. Mention the advantages.

Turn over

11. Give an account on whole mounts. Describe the methodology.
12. Explain the process of megasporogenesis.
13. Explain with diagram the anatomy of a centric leaf.
14. With neat diagrams give an account on nodal anatomy.

(4 × 3 = 12 weightage)

Part C

*Answer any two questions.
Each question carries 5 weightage.*

15. Write an essay on the principle and methods of killing and Fixing.
16. With suitable examples explain the pollen morphology and its application. Add a note on its evolution.
17. What is anther culture? Explain the procedure. Add a note on its applications.
18. Describe the anomalous secondary growth on storage roots.

(2 × 5 = 10 weightage)

**FIRST SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY)
EXAMINATION, NOVEMBER 2020**

(CBCSS)

Botany

BOT 1C 02—MYCOLOGY, LICHENOLOGY, MICROBIOLOGY AND PLANT PATHOLOGY
(2019 Admissions)

Time : Three Hours

Maximum : 30 Weightage

General Instructions

1. *In cases where choices are provided, students can attend **all** questions in each section.*
2. *The minimum number of questions to be attended from the Section / Part shall remain the same.*
3. *There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.*

Part A

*Answer any **four** questions.
Each question carries 2 weightage.*

1. Write a note on ericoid mycorrhizae and orchid mycorrhizae.
2. Write a note on heterothallism in fungi
3. Give the general characteristics of myxomycota.
4. Explain the structure of mycoplasma. What is their significance?
5. Write a note on biocides in plant protection.
6. Distinguish between archaeobacteria and eubacteria.
7. Describe the fine structure of T4 Phage with the help of a diagram.

(4 × 2 = 8 weightage)

Part B

*Answer any **four** questions.
Each question carries 3 weightage.*

8. What are bacteriophages? Discuss in brief their morphology and replication.
9. Write a note on microbiology of fermented food.

Turn over

10. Briefly describe the role of microbes in sewage disposal.
11. Give the salient features of cyanobacteria and add a note on their economic importance.
12. Describe the morphology of thallus structure of lichens.
13. What are the different types of zoospore found in mastigomycotina ?
14. Give an account on : (a) Sclerotia. (b) Mycelial strands. and (c) Rhizomorphs.

(4 × 3 = 12 weightage)

Part C

Answer any two questions.

Each question carries 5 weightage.

15. Give a detailed account on the symptoms, causal organism, disease cycle and control measures of powdery mildew and abnormal leaf fall of rubber.
16. Explain the classification of fungi by Alexopoulos and describe the characters of major groups.
17. What are the general characters of Ascomycetes ? Give an account on their economic importance.
18. Give an account on the production of : (a) Antibiotics ; (b) Organic acids and (c) Vitamins.

(2 × 5 = 10 weightage)

**FIRST SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY)
EXAMINATION, NOVEMBER 2020**

(CBCSS)

Botany

BOT 1C 01—PHYCOLOGY, BRYOLOGY, PTERIDOLOGY AND GYMNOSPERMS

(2019 Admissions)

Time : Three Hours

Maximum : 30 Weightage

General Instructions

1. *In cases where choices are provided, students can attend **all** questions in each section.*
2. *The minimum number of questions to be attended from the Section / Part shall remain the same.*
3. *There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.*

Part A

*Answer any **four** questions.*

Each question carries 2 weightage.

1. Comment on the phylogenetic considerations in algal classification. Give a brief outline of a phylogenetic classification.
2. Write an illustrated account of heterotrichous and siphonous forms of thallus organization in algae.
3. List the modes of perennation in bryophytes.
4. Write the characteristic features of Sphaerocarpaceae with emphasis on reproduction.
5. Write an account on the contributions of Indian pteridologists.
6. Discuss the evolutionary and phylogenetic significance of Sphenopsida.
7. Give an outline of Chamberlain's classification of gymnosperms with the characteristic features.

(4 × 2 = 8 weightage)

Turn over

Part B

Answer any four questions.

Each question carries 3 weightage.

8. Give a general account of thallus structure and reproduction in Rhodophyta.
9. Write an account of asexual spores in algae substantiated with suitable illustrations.
10. Describe the sex organs and sporogonia of Marchantiales.
11. Give an account apospory, apogamy and parthenogenesis in the life cycle of pteridophytes and the causes for these abnormalities.
12. Discuss the origin and evolution of sporangium in pteridophytes.
13. Give an illustrated account of the reproductive structures in Gnetales, Ephedrales and Welwitschiales.
14. Discuss the distribution and morphology of Pteridospermales and Ginkgoales.

(4 × 3 = 12 weightage)

Part C

Answer any two questions.

Each question carries 5 weightage.

15. Algae are more beneficial than detrimental to mankind'. Elaborate the statement.
16. Write an essay on the evolution of gametophyte and sporophytes of bryophytes.
17. How is the vascular system organised in different pteridophytes ? Add a note on the evolution of steles.
18. Write an essay on geological time scale and correlated predominant gymnosperms.

(2 × 5 = 10 weightage)

**FIRST SEMESTER M.Sc. DEGREE (SUPPLEMENTARY) EXAMINATION
NOVEMBER 2020**

(CUCSS)

Botany

BO 01 CT 03—ANGIOSPERM ANATOMY, ANGIOSPERM, EMBRYOLOGY,
PALYNOLOGY AND LAB TECHNIQUES

(2010 Admissions)

Time : Three Hours

Maximum : 36 Weightage

I. Answer the questions very briefly. Each question carries 1 weightage :

- 1 What is Cork Cambium ? Explain its activity.
- 2 What is the difference between ray initial and fusiform initial ?
- 3 Explain sieve tube differentiation.
- 4 Comment on the role of leaf traces.
- 5 Differentiate heart wood and sap wood.
- 6 Explain Dendrochronology.
- 7 Write a note on Procambium.
- 8 Give an account on natural stains.
- 9 Explain the term clearing. Give an example for a clearing agent.
- 10 What are whole mounts ? Describe in brief the method of preparation.
- 11 What is Polyembryony ?
- 12 Enlist four characters of killing and fixing fluid.
- 13 Explain Vital Staining. What is its importance ?
- 14 Explain the process of Paraffin embedding.

(14 × 1 = 14 weightage)

II. Answer any seven questions in not more than 100 words. Each question carries 2 weightage :

- 15 Write an account on the role of anatomical characters in plant taxonomy.
- 16 Explain with examples the nodal patterns observed.
- 17 Describe with diagrams the process Microsporogenesis.

Turn over

- 18 What is Dehydration ? Write the protocol of dehydration using solvent of Paraffin.
 - 19 Explain the structure of beet root after secondary thickening.
 - 20 Write an account on the root-stem transition.
 - 21 Describe the role of Vascular Cambium in secondary growth of stem and root.
 - 22 Explain the anatomy of a dicot seedling.
 - 23 What is Aeropalynology ? What is its significance ?
 - 24 Explain with diagrams the development of a typical embryo sac.
- (7 × 2 = 14 weightage)

III. Answer any *two* questions in 300 words each. Each question carries 4 weightage :

- 25 With suitable examples explain the significance of embryological studies in taxonomy.
- 26 Describe the steps involved in embedding and infiltration for microtome sectioning.
- 27 What is Palynology ? Discuss the application of pollen morphological studies.
- 28 Explain with diagrams the anomalous secondary thickening in storage roots.

(2 × 4 = 8 weightage)

**FIRST SEMESTER M.Sc. DEGREE (SUPPLEMENTARY) EXAMINATION
NOVEMBER 2020**

(CUCSS)

Botany

BO01CT02—MYCOLOGY AND LICHENOLOGY, MICROBIOLOGY AND PLANT
PATHOLOGY

(2010 Admissions)

Time : Three Hours

Maximum : 36 Weightage

I. Answer all questions very briefly. Each question carries 1 weightage :

- 1 What is pycnidium ?
- 2 Write a note on clamp connection.
- 3 What heterothallism ? Give an example.
- 4 Differentiate between perithecium and apothecium.
- 5 What are coprophilus fungi ? Give an example.
- 6 Differentiate between plant and animal viruses.
- 7 What is meant by biopesticides ?
- 8 Write a note on mycoplasma.
- 9 What is meant by rhizomorph ?
- 10 Write any *two* methods of food preservation.
- 11 What are the symptoms of rhizome rot of ginger ?
- 12 What is meant by plant quarantine ?
- 13 Write a brief note on prions.
- 14 What are aflatoxins ?

(14 × 1 = 14 weightage)

II. Answer any *seven* questions in not more than 100 words each. Each question carries 2 weightage :

- 15 What are the salient features of Ascomycota ?
- 16 Write a note on reproductive structures in lichens.

- 17 Describe the biochemical defense mechanism in plants.
- 18 Give a brief outline of classification of fungi proposed by Alexopoulos.
- 19 With the help of a diagram describe the structure of T4 Phage.
- 20 Give the symptoms, causal organism, disease cycle and control measures of tikka disease of groundnut.
- 21 Explain the production of vaccines and amino acids.
- 22 Write a note on the significance of micro-organism as a source of food.
- 23 Describe characteristics of cyanobacteria.
- 24 Give an account on Myxomycota.

(7 × 2 = 14 weightage)

III. Answer any *two* questions in not more than 300 words each. Each question carries 4 weightage :

- 25 With suitable diagrams give an account on morphology and ultra structure of bacteria.
- 26 Give an account on general characteristics and economic importance of Basidiomycetes.
- 27 Write an essay on different type mycorrhizae and their significance.
- 28 Explain different methods of plant disease management.

(2 × 4 = 8 weightage)

**FIRST SEMESTER M.A./M.Sc./M.Com. DEGREE EXAMINATION
DECEMBER 2019**

(CUCSS)

Botany

BO 01 C T01—PHYCOLOGY, BRYOLOGY, PTERIDOLOGY AND GYMNOSPERMS

(2010 Admissions)

Time : Three Hours

Maximum : 36 Weightage

I. Answer *all* the questions very briefly :

- 1 Describe the mechanism of vegetative propagation in diatoms.
- 2 Explain the structure of algal flagella.
- 3 Comment on the different methods of sexual reproduction in Algae.
- 4 Discuss the role of Algae in soil fertility.
- 5 Comment on the elaters found in Bryophytes.
- 6 Write notes on columella in Bryophytes.
- 7 Bring out the general characters of Sphaerocarpaceae.
- 8 Write notes on apospory in Pteridophytes.
- 9 Differentiate between leptosporangiate and eusporangiate sporangia.
- 10 Distinguish exosporic and endosporic gametophytes, citing examples.
- 11 Describe the structure of spore producing structures in Ophioglossales.
- 12 State the important features of Pentoxylales.
- 13 Describe the structure of male strobilus in Ephedrales.
- 14 List out the advanced anatomical characters in Gnetales.

(14 × 1 = 14 weightage)

II. Answer any *seven* questions in not more than 100 words :

- 15 What are the various types of spores found in Algae ?
- 16 Discuss pigmentation in Algae.
- 17 Anthocerotales are the distinct but synthetic group of plants. Justify the statement.
- 18 Write an account on the economic importance of Pteridophytes.
- 19 Discuss the biological importance of phytoplanktons.

Turn over

- 20 Explain the structure of sporophyte in Sphaginales. Draw diagram.
- 21 Describe the various types of steles found in Sphenopsida and Pteropsida.
- 22 Bring out the structure of gametophytes in Psilotales, Equisetales and Isoetales.
- 23 Discuss the structure of ovules in Gymnosperms.
- 24 Write an account on evolutionary tendencies in Gymnosperms with respect to reproduction.

(7 × 2 = 14 weightage)

III. Answer any *two* questions in 300 words :

- 25 Give an illustrated account of the various life cycle patterns in Algae.
- 26 Describe the range of thallus structure in Bryophytes. Illustrate your answer with diagrams.
- 27 Write an essay on the origin and evolution of sporangium in Pteridophytes.
- 28 Write an essay on the economic importance of Gymnosperms.

(2 × 4 = 8 weightage)