

B. Sc 2nd Semester Sessional Exam-2023

Subject: Botany (HG)

Paper- BOT-HG-2016

Time-1 hour

Full Marks- 30

Answer any six:

6×5= 30

Q.1. Describe the natural system of classification with their merits and demerits.

Q.2. Describe the Carbon cycle in nature with diagram.

Q.3. What do you mean by Ecological Pyramid? Write the different types of Ecological Pyramid.

Q. 4. Write the principles of ICBN.

Q.5. Write the main function of Herbaria.

Q.6. Write a short notes on (any two):

i). Nomenclature.

ii). Taxonomic hierarchy.

iii). Identification.

Q.7. What is Ecological Succession ? Write briefly on the processes of Ecological Succession.

Q.8. Write a note on Endemism.

Q.9. Write the diagnostics characters of Hydrophytes and Xerophytes.

Q.10. What is Ecotone and Edge Effect ?

B. Sc 4th Semester Sessional Exam-2023

Subject: Botany (HG)

Paper- BOT-HG-4016

Time-1 hour

Full Marks- 30

Answer any six:

6×5= 30

Q.1. How can you classify Meristematic Tissue according to their position and function in the plant body ?

Q.2. Write the general characteristics of Meristematic Tissue.

Q.3. Write the difference between Heart Wood and Sap Wood.

Q.4. Write a short note on Secondary Growth.

Q.5. What is Pollination ? Describe the different kinds of Pollination.

Q.6. Define Fertilization. Explain the process of double fertilization with labelled diagram.

Q.7. Describe the structure of mature embryo sac with labelled diagram.

Q.8. Write the methods of development of different kinds of endosperms with labelled diagram.

Q.9. Describe the structure of mature Ovule with labelled diagram and write their types.

Q.10. Write the difference between internal structure of monocot and dicot stem.

B. Sc 2nd Semester Sessional Exam-2023

Subject: Botany (HC)

Paper- BOT-HC-2016

Time-1 hour

Full Marks- 30

Part- A

Answer any three:

- Q.1. Write the general characters of Fungi.
- Q.2. Describe the asexual reproduction of Rhizopus.
- Q.3. Describe the life cycle of Phytophthora with diagram.
- Q.4. Describe the sexual reproduction of Albugo (Cystopus).
- Q.5. Describe the method of zoospore formation with diagram.

Part-B

Answer any three of the following questions.

- Q.1. Write the general characters of Lichen.
- Q.2. Explain the reproduction of Lichen.
- Q.3. What is Allied fungi ? Describe the different types of Plasmodia.
- Q.4. Explain the general symptoms of plant diseases.
- Q.5. What is Rust ? Describe the disease of Black stem rust of Wheat.

B. Sc 2nd Semester Sessional Exam-2023

Subject: Botany (HC)

Paper- BOT-HC-2026

Time-1 hour

Full Marks- 30

Answer any six:

6×5= 30

Q.1. Draw the structure of mature sporophyte of Marchantia and label it.

Q.2. Write the methods of vegetative reproduction found in Marchantia.

Q.3. Describe the internal structure of thallus of Riccia.

Q.4. Draw the labelled structure of an archegonium and an antheridium of Bryophyte.

Q.5. Write the graphic representation of life cycle of bryophytic plant.

Q.6. Write a note on Apospory and Apogamy.

Q.7. Write five anatomical characters of stem of Selaginella.

Q.8. What is Telome Theory ? Write in brief the process of Telome theory.

Q.9. Write a note on Stele in Pteridophyte.

Q.10. Write about anatomical characters of Rhynia.

B. Sc 4th Semester Sessional Exam-2023

Subject: Botany (HC)

Paper- BOT-HC-4016

Time-1 hour

Full Marks- 30

Answer any six questions-

6×5= 30

Q.1. Write the process of denaturation and renaturation of DNA molecules.

Q.2. Describe the Cot Curve.

Q.3. Write five properties of Genetic Code.

Q.4. Give an account of Rolling Circle Mode of Replication.

Q.5. Explain in brief on Lac Operon and Trp Operon.

Q.6. Write a short notes on (any two):

a) Splicing.

b) RNA Editing.

c) Gene Silencing.

e) Central Dogma.

Q.7. Write in brief on various step of Protein synthesis.

Q.8. Write the salient features of Double Helix of DNA.

Q.9. Draw and describe the structure of DNA.

Q.10. Write a note on RNA Priming.

B. Sc 4th Semester Sessional Exam-2023

Subject: Botany (HC)

Paper- BOT-HC-4026

Time-1 hour

Full Marks- 30

Answer any six questions-

6×5= 30

Q.1. Write a note on Water Table.

Q.2. What is Ecological Pyramid? Write the different types of Ecological Pyramids.

Q.3. Describe the nitrogen cycle in nature diagrammatically.

Q.4. Write a note on soil profile.

Q.5. Write a note on food chain and food web.

Q.6. Write about r and k selection.

Q.7. Describe the growth curve of population.

Q.8. Write a note on population size and density.

Q.9. What are the different types of population dispersion ?

Q.10. Write a note on population pyramids.

B. Sc 4th Semester Sessional Exam-2023

Subject: Botany (HC)

Paper- BOT-HC-4036

Time-1 hour

Full Marks- 30

Answer any six:

6×5=30

Q.1. Describe the functions and importance of Herbarium.

Q.2. Describe the Botanical Gardens of the World and India.

Q.3. Write the classification of Bentham and Hooker system with their merits and Demerits.

Q.4. What is Phylogenetic system of Classification. Write Briefly.

Q.5. Describe the family Lamiaceae or Magnoliaceae with their economic importance.

Q.6. Why Asteraceae family is highly advanced family among the groups of dicotyledons.

Q.7. Difference between Homology and Analogy.

Q.8. Difference between Monophyly and Polyphyly.

Q.9. Write short notes on (any one):

a). Angiosperm phylogeny Group (APG).

b) Phenograms and Cladograms.

Q.10. Write briefly on the concept of Taxa.

B. Sc 4th Semester Sessional Exam-2023

Subject: Botany (HC)

Paper- BOT-SE-4014

Time-1 hour

Full Marks- 30

Answer any six:

Q.1. Write the definition and objective of Nursery.

Q.2. Write the different physical requirements or resures for Nursery.

Q.3. Describe the different types of Nursery.

Q.4. Write a brief account on vegetative reproduction.

Q.5. Write a short notes:

a). Micropropagation.

b). Layering

Q.6. Write the importance of Nurseries in horticulture.

Q.7. Write the different methods of Grafting.

Q.8. What is seed dormancy? Describe the structure of a seed and its types.

Q.9. Write the methods of Seed Sowing.

Q.10. Write the methods of preparation of Nursery Beds.

B. Sc 6th Semester Sessional Exam-2023

Subject: Botany (HC)

Paper- BOT-HC-6016

Time-1 hour

Full Marks- 30

Answer any six:

6×5= 30

Q.1. Write the graphic representation of the process of glycolysis.

Q.2. Write the process of oxidative decarboxylation of pyruvate with required cofactors for it.

Q.3. Write a note on Cyanide resistant respiration.

Q.4. Write the C4 Pathway.

Q.5. Write a note on Calcium Calmodulin Concept.

Q.6. Write briefly the steps of Dark Reaction of Photosynthesis.

Q.7. Write down the Glyoxylate Cycle.

Q.8. Explain the binding change mechanism of ATP Synthesis.

Q.9. Write the biosynthesis pathway of Sucrose.

Q.10. Write a short note on ATP Synthase.

B. Sc 6th Semester Sessional Exam-2023

Subject: Botany (HC)

Paper- BOT-HC-6026

Time-1 hour

Full Marks- 30

Group – A (Answer any three)

3×5= 15

Q.1. What is Totipotency ? Write the utility of totipotency.

Q.2. Write briefly the technique of Tissue Culture.

Q.3. Write short note on Cryopreservation.

Q.4. Write short note on Pest Resistant (Bt-Cotton).

Q.5. Write the role of transgenics in bioremediation.

Group – B (Answer any three)

3×5= 15

Q.1. What is molecular scissor ? Write a note on different types of restriction endonucleases.

Q.2. What is Cloning Vector ? Write a note on Ti- Plasmid.

Q.3. What is YAC ? Describe about YAC vector.

Q.4. Describe about cosmid vector and its structure.

Q.5. Write a note on BAC as cloning vector.

B. Sc 6th Semester Sessional Exam-2023

Subject: Botany (HC)

Paper- BOT-HE-6016

Time-1 hour

Full Marks- 30

Answer any six:

6×5= 30

Q.1. What is Pollution ? Write about the water pollution.

Q.2. Write the role of microbes in sewage and domestic waste water treatment system.

Q.3. Write about BOD and COD.

Q.4. Explain about Biological Nitrogen Fixation.

Q.5. What is Mycorrhizae ? Describe the different types of Mycorrhizae.

Q.6. Write short notes on Bioremediation.

Q.7. Write a note on scope of industrial microbiology.

Q.8. Write in brief about industrial fermentation.

Q.9. Differentiate between Batch and Continuous fermentation process.

Q.10. Describe the constantly stirred tank fermenter.