

**B.Sc. DEGREE EXAMINATION  
DECEMBER 2020**

**First Year**

**PLANT DIVERSITY - I**

**Time : 3 hours**

**Maximum marks : 75**

**PART A — (5 × 5 = 25 marks)**

**Answer any FIVE only.**

1. Write the characters of Chlorophyta and Rhodophyta.
2. Describe the general characteristic features of fungi.
3. Write short notes on Lichens.
4. Give the outline classification of Bryophytes.
5. Write brief account on *Polytrichum*.
6. List out the general characters of viruses.
7. Explain the role of bacteria in sewage treatment.
8. Give the symptoms of blight and blast diseases.

PART B — (5 × 10 = 50 marks)

Answer any FIVE only

9. Describe the life cycle of Sargassum with neat sketches.
10. Explain sexual reproduction methods in Algae.
11. Give the economic importances of fungi.
12. Write an essay on *Penicillium*.
13. Explain the general characteristic features of Bryophytes.
14. Describe the structure and properties of bacterial cell wall.
15. Give the classification of plant diseases.
16. Explain:
  - (a) Pest control methods.
  - (b) Plant disease management.

**B.Sc. DEGREE EXAMINATION – DECEMBER – 2020****BOTANY****FIRST YEAR****PLANT DIVERSITY - II****Time : 3 Hours****Maximum Marks : 75****PART – A****(5 x 5 = 25 Marks)****Answer any FIVE questions:**

1. Write short account on gametophytic plant body of Pteridophytes.
2. Explain the external morphology of Selaginella.
3. List out the differences between Homoephyllum and Heterophyllum.
4. Briefly explain about ligule with diagram.
5. Write brief account on cycas root.
6. Describe the external morphology of Lycopodium.
7. Write a short essay on diversification of flowering plants.
8. Write the external morphology of Rhynia.

**PART – B****(5 X 10 = 50 Marks)****Answer any FIVE questions:**

9. Write an account on pteridophytes classification by Smith.
10. Describe the sporophyte of Psilotum.
11. Explain the various methods of reproduction in Selaginella.
12. Write an essay on life cycle of Marsilea.
13. Write about the sex organs of Equisetum.
14. Write an account on sexual reproduction in Cycas.
15. Describe the external morphology of Pinus.
16. Write an essay on classification and formation of fossil.

B.Sc.,DEGREE EXAMINATION – DECEMBER 2020.

SECOND YEAR

BOTANY

PLANT TAXONOMY AND ECONOMIC BOTANY

Time : 3 hours

Maximum marks : 75

PART-A

(5× 5 = 25 Marks)

Answer any FIVE questions.

1. Describe the morphology types and its functions of root .
2. Write short account on various modifications of leaf.
3. Enumerate the economic importance of Rutaceae.
4. Describe the floral characters of Annonaceae.
5. Draw the schematic presentation of Engler and Prantl system of classification.
6. Describe the inflorescence of Lamiaceae.
7. Draw and describe Spikelet inflorescence.
8. Describe the cultural practices of any one medicinal plant.

PART-B

(5× 10 = 50 Marks)

Answer any FIVE questions.

9. Write an essay on structure and types of fruits.
10. Write a detailed account on Bentham and Hooker system of classification.
11. With suitable diagram describe the morphology of Fabaceae.
12. Write a detailed account on the salient features of Brassicaceae.
13. Explain the characteristic features of Araceae with diagram.
14. Describe the vegetative and floral features of Liliaceae.
15. Explain the basic concepts and principles of nomenclature.
16. Explain the cultural practices of any one medicinal and economical plants

**B.Sc., DEGREE EXAMINATION – DECEMBER 2020.****BOTANY****SECOND YEAR****PLANT ANATOMY AND EMBRYOLOGY****Time : 3 Hours****Maximum Marks : 75****PART - A****(5 × 5 = 25 Marks)**Answer any **FIVE** questions.

1. What is simple tissue? Add notes on its types and functions
2. Write short account on dermal tissue.
3. Write the morphology and functions of root system.
4. Draw the primary structure of monocot root.
5. Write short account on primary structure of Dicot leaf.
6. Write short notes on tapetum and its significance.
7. Draw different types of ovule.
8. Write short account on Endosperm and its uses.

**PART - B****(5 × 10 = 50 Marks)**Answer any **FIVE** questions.

9. Write a detailed account on meristem theories and its clarification.
10. Write an essay on Complex Permanent tissues with diagram.
11. Write about secondary thickening in dicots with diagram.
12. With labeled diagram explain the nodal anatomy of dicot and monocot
13. Write a detailed account on microsporogenesis.
14. Explain the development of ovule.
15. Write an essay on double fertilization triple fusion and add notes on post fertilization changes.
16. Write a detailed account on dicot embryo development.

## UG DEGREE EXAMINATION – DECEMBER - 2020

## BOTANY

## THIRD YEAR

## CELL BIOLOGY AND GENETICS

Time : 3 Hours

Maximum Marks : 75

## PART A (5× 5 = 25 Marks)

Answer any **FIVE** questions.

1. Enumerate the difference between prokaryotic and Eukaryotic cell.
2. Describe the Structure of Plasma membrane.
3. Write short account on mitochondria.
4. Write the structure and function of Golgi complex.
5. Describe Prophase I of Meiosis.
6. Write short account on Monohybrid cross.
7. Describe chromosomal mapping.
8. Write short essay on Mutation.

## PART B (5× 10 = 50 Marks)

Answer any **FIVE** questions.

9. Explain the Ultra structure of a plant cell.
10. Write a detailed account on different phases and development of Cell Cycle.
11. Explain the Structure, genetics and function of Chloroplast.
12. Explain the different stages of mitosis.
13. Write a detailed account on structure and function of nucleus.
14. Describe about Linkage and crossing over
15. Explain test and back cross with example.
16. Describe the Watson and crick model of DNA. Add notes on its functions.

**UG-C-568**

**BBOT-32**

**B.Sc. DEGREE EXAMINATION - DECEMBER 2020**

**BOTANY**

**THIRD YEAR**

**PLANT PHYSIOLOGY**

**Time: 3 Hours**

**Maximum Marks: 75**

**Section A (5 x 5 = 25 Marks)**

Answer any **FIVE** questions:

1. Give a brief account on mechanism of Guttation in plants.
2. Discuss about the factors affecting transpiration in plants.
3. Write note on photosynthesis in C<sub>3</sub> plants with suitable examples.
4. Briefly explain the TCA cycle.
5. What are steps involved in the  $\beta$  - oxidation of fatty acids?
6. Write the causes of seed dormancy and how to get rid of it.
7. Write the role of gibberriellin in plant growth.
8. Explain vernalization and its significance.

**Section B (5 x 10 = 50 Marks)**

Answer any **FIVE** questions:

9. Give an account of transpiration in plants.
10. Explain ascent of sap in plants according to Dixon and Jolly theory.

11. Discuss the detail about Glycolysis pathway.
12. Give a detailed account on non-cyclic photophosphorylation.
13. Explain in detailed about long and short day plants with suitable example.
14. Describe the physiological of role of auxins in plant growth.
15. Analyse the role of cytokinins in plant growth and metabolism.
16. Bring out the detailed account of ethylene in plant.

**B.SC. DEGREE EXAMINATION – DECEMBER - 2020****Botany****Third Year****Ecology and Forestry**

Time: 3 Hours

Maximum Marks: 75

**PART A (5 × 5 = 25 Marks)**Answer any **FIVE** questions.

1. Distinguish between food chain and food web in ecosystem
2. Enumerate the components and salient features of aquatic biome
3. Analyse ecological adaptations of halophytes
4. Explain ecological niches and its importance
5. Explain causes and effects of radioactive pollution
6. Highlight the characteristic features of tropical evergreen forest
7. Analyse the forest products and its utilization
8. Describe the characteristic features of reserve forest

**PART B (5 × 10 = 50 Marks)**Answer any **FIVE** questions

9. Analyze the ecological pyramids and energy flow of ecosystem
10. Using a diagrammatic representation of biogeochemical cycles
11. Discuss in detail about the various ecological adaptation of xerophytes
12. Enumerate various types of pollution and its impact on human health
13. Explain the causes, effects and control measures of thermal pollution
14. Expound the details about coniferous forest and explain its advantages
15. Describe sustainable management system of forest
16. Compare and contrast between forestry and silviculture

**B.S.C. DEGREE EXAMINATION - DECEMBER – 2020****BOTANY****THIRD YEAR****BIOCHEMISTRY AND BIOTECHNOLOGY**

Time: 3Hours

Maximum Marks: 75

**PART A (5 × 5 = 25 Marks)**Answer any **FIVE** questions.

1. Briefly explain the concept of atoms
2. Outline the classification of carbohydrate.
3. Explain characteristic features and properties of aminoacids
4. Discuss about the derived lipids with suitable examples
5. How can you classify the enzymes based on their properties?
6. Compare and contrast between plasmids and cosmids
7. List down the characteristic features and concept of tissue culture
8. What is organogenesis? Add note on its advantages and limitations

**PART A (5 × 5 = 25 Marks)**Answer any **FIVE** questions

9. Bring out the detailed account on isomerism and its types
10. Discuss in detail about the classification of amino acid
11. Give a detailed account on classification of lipids
12. Analyse the mechanism of enzyme action according to Induced-fit model
13. Critically examine various types of enzymes in rDNA technology
14. Critically examine the gene cloning strategies
15. Expound the protoplasmic fusion and add note on its advantages
16. Enumerate the application of micropropagation techniques in crop improvement

**UG-C-563**

**BBOTA-11**

**B.Sc. DEGREE EXAMINATION**

**DECEMBER 2020**

**First Year**

**Allied Chemistry**

**GENERAL CHEMISTRY**

**Time : 3 hours**

**Maximum marks : 75**

**SECTION A — (3 × 5 = 15 marks)**

**Answer any THREE questions.**

1. What are primary and secondary standards in the volumetric analysis? Given an example for each.
2. Write short note on column chromatography and its applications.
3. What are the difference between homogeneous and heterogeneous catalysis?
4. How carbohydrates are classified?

5. What are the general precautions for avoiding lab accidents?

SECTION B — ( $4 \times 15 = 60$  marks)

Answer any FOUR questions.

6. (a) What is rule of eight and Lewis symbols? (8)  
(b) Write short notes on Hydrogen bond. (7)
7. (a) What are nucleophiles and electrophiles? Explain with example. (7)  
(b) Write any two reactions of aldehydes. (8)
8. (a) Explain positive and negative catalyst with suitable example. (7)  
(b) Write any two methods of preparation of polystyrene. (8)
9. (a) What are the uses of Chloramine T and Iodoform? (8)  
(b) Define anaesthetics and antipyretics. (7)
10. Write short notes on  
(a) Air Pollution and its method of control. (8)

(b) Radioactive pollution and its method of prevention. (7)

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UG-C-566

BBOTA-21

B.Sc. DEGREE EXAMINATION –  
DECEMBER 2020

Second Year

Botany

ANIMAL DIVERSITY

Time : 3 hours

Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. Enlist the characters of invertebrate.
2. Differentiate between class Reptilia and Amphibia.
3. Illustrate the structure of Earthworm.
4. Describe the structure of *Obelia*.
5. Give external features of Prawn.
6. Give detail account on respiratory system of frog.
7. Explain digestive system of shark.
8. Write external features of rabbit.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

9. Narrate the characters and diversity of chordata.
  10. Write structure and reproduction of *Paramoecium*.
  11. Explain the life cycle of sea star
  12. Give the biology of Lamellidens
  13. Describe the urenogenital system of Calotes
  14. Explain the respiratory system of Pigeon
  15. Compare the brain structure of rabbit and pigeon
  16. Give notes on (a) *Fasciola hepatica* (b) frog.
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