



**UNIVERSITY OF NORTH BENGAL**

B.Sc. Honours 4th Semester Examination, 2021

**SEC2-BOTANY**

Full Marks: 60

**ASSIGNMENT**

*The figures in the margin indicate full marks.*

**The question paper contains Paper - I, II, III, IV, V, VI, VII, VIII and IX.  
The candidates are required to answer any *one* from *nine* papers.  
Candidates should mention it clearly on the Answer Book.**

**PAPER-I**

**BIOFERTILIZER**

**Answer any six of the following questions (each within 300 words)** 10×6 = 60

1. Write an account on organic farming with special emphasis on biocompost. 10
2. Discuss the process of isolation and mass multiplication of *Rhizobium*. 10
3. Elaborate the methods and field application of vermicomposting. 10
4. Illustrate the different types of mycorrhizal association and their positive roles on agriculture. 10
5. Give a brief account on *Azolla-Anabaena* association and its significance in rice cultivation. 10
6. Describe the impact of VAM on growth and yield of crop plants. 10
7. Write notes on: 10  
(i) Green manure (ii) Recycling of biodegradable wastes.

**PAPER-II**

**HERBAL TECHNOLOGY**

**Answer any six of the following questions (each within 300 words)** 10×6 = 60

1. How drugs are prepared for commercial market? Give a detail account of collection, drying and preservation of drugs. 10
2. Discuss the different methods of cultivation used for propagating medicinal plants. 10
3. Define herbal drug. Briefly explain the methods employed in the qualitative analysis of secondary metabolites like alkaloids, flavonoids, steroids and phenolic compounds. 10
4. Describe the chemical constituents and uses of *Withania somnifera*, *Catharanthus roseus* and *Centella asiatica*. 10
5. Write down the systematic position and medicinal uses of Tulsi and Ashoka. 10
6. Discuss in detail the various methods of drug evaluation and standardization. 10
7. Define micropropagation. Explain in detail the micropropagation of Neem. 10

### PAPER-III

#### NURSERY AND GARDENING

Answer any six of the following questions (each within 300 words) 10×6 = 60

1. Define gardening. What are the objectives and scope of gardening? 10
2. Describe different factors responsible for loss of genetic purity during seed production. 10
3. Explain the importance of manuring in gardening. Describe in detail how the pests and diseases are managed? 10
4. What is seed viability? Describe factors affecting seed viability. Mention some methods of breaking seed dormancy. 10
5. What is cutting? Describe the process of hard wood cutting. Explain how the cuttings are planted in a rooting medium? 10
6. What is the botanical name of tomato? Give an account of tomato with reference to sowing, raising of seed and harvesting. 10
7. Write short notes: 10
  - (i) Planting and Transplanting
  - (ii) Vegetative propagation used in garden and nursery.

### PAPER-IV

#### FLORICULTURE

Answer any six of the following questions (each within 300 words) 10×6 = 60

1. Describe different factors affecting flower production and flower quality. 10
2. Write the importance of floriculture and explain the methods to prolong the Vase life of cut flowers. 10
3. Discuss on 'commercial floriculture' describing the method of cultivation of marigold. 10
4. Write an account on Bonsai and Cut flowers. 10
5. Describe the 'landscape gardening' mentioning its importance in Educational Institute. 10
6. Describe the role of plant growth regulators in gardening. 10
7. Discuss the principles of garden designs with special reference to Mughal and Japanese gardens. 10

### PAPER-V

#### MEDICINAL BOTANY

Answer any six of the following questions (each within 300 words) 10×6 = 60

1. Write an essay on plants used in Ayurvedic treatments. 10
2. Write an elaborate note on polyherbal formulations with reference to Unani system. 10
3. Why *in situ* mode of conservation of Endangered and Endemic plants is preferred over *ex situ* mode? 10

- |    |  |    |
|----|--|----|
| 4. | Give a brief account of use of natural products in treatment of jaundice and skin diseases.      | 10 |
| 5. | Discuss the objectives of the nursery, its classification and important components of a nursery. | 10 |
| 6. | Discuss methods to study Ethnobotany and applications of Ethnobotany.                            | 10 |
| 7. | Briefly describe different methods of propagation of medicinal plants.                           | 10 |

### PAPER-VI

#### PLANT DIVERSITY AND HUMAN WELFARE

**Answer any six of the following questions (each within 300 words)** 10×6 = 60

- |    |   |    |
|----|---|----|
| 1. | Discuss the role of IUCN, WWF and NBPGR in management of biodiversity.  | 10 |
| 2. | Write comprehensive note on biodiversity loss and its impact on nature. | 10 |
| 3. | Discuss different method of biodiversity conservation.                  | 10 |
| 4. | Write an essay on biodiversity at different level.                      | 10 |
| 5. | Discuss values and uses of biodiversity.                                | 10 |
| 6. | Discuss the role of forestry and ornamental plants in human welfare.    | 10 |
| 7. | Write short notes on:   | 10 |
|    | (i) Biodiversity awareness programme      (ii) Sustainable development. |    |

### PAPER-VII

#### ETHNOBOTANY

**Answer any six of the following questions (each within 300 words)** 10×6 = 60

- |    |   |    |
|----|---|----|
| 1. | Define Ethnobotany. Comment on the concept and scope of Ethnobotany.  | 10 |
| 2. | Comment on the role of the following in the life of tribals:  | 10 |
|    | (i) Intoxicants and beverages yielding plants   |    |
|    | (ii) Resins and oils yielding plants.   |    |
| 3. | Explain how Ethnobotany can be used as a tool to protect the interests of the ethnic groups.  | 10 |
| 4. | State the significance of <i>Azadirachta indica</i> and <i>Ocimum sanctum</i> in ethno botanical practices along with their habitat and morphology. | 10 |
| 5. | Point out the importance of traditional knowledge in order to safeguard the needs of the tribals.   | 10 |
| 6. | What do you understand by the term tribals? How will you differentiate between the major and the minor ethnic groups? Give one example each.        | 10 |
| 7. | Elaborate the various roles played by the tribals on the conservation of plant genetic resources.   | 10 |

### PAPER-VIII

#### MUSHROOM CULTURE TECHNOLOGY

**Answer any six of the following questions (each within 300 words)** 10×6 = 60

1. Give a brief account of the history of mushroom cultivation with special reference to India. 10
2. Is it possible to differentiate between edible and poisonous mushroom? Explain your answer scientifically. Describe medicinal value of edible mushrooms. 10
3. Describe the composting technology in button mushroom production. 10
4. What do you understand by short-term storage of mushroom? Describe the various methods of long term storage of mushrooms. 10
5. What is pure culture? What is its use in mushroom culture? Elaborate your answer. 10
6. Describe bed preparation for paddy straw and the various factors affecting it. Describe the precautions to be followed during its cultivation. 10
7. Write short notes: 10
  - (i) Mushroom Research Centers in India
  - (ii) Export value of mushroom.

### PAPER-IX

#### INTELLECTUAL PROPERTY RIGHTS

**Answer any six of the following questions (each within 300 words)** 10×6 = 60

1. Briefly discuss the Patent Act 1970 and its subsequent amendments. Provide an account of the Procedure of Obtaining of Patents and the working of Patents. 10
2. Write an account on Copyright law in India and mention the types of work protected under Copyright law. Write a note on Copyright infringement. 10
3. What is trademark? Discuss the objectives and different types of trademarks. Write a short note on trademark rights. 10
4. Write the objectives of Geographical Indications. Discuss the position of Geographical Indications in India. 10
5. Discuss the objective and concept of protection of Traditional knowledge. Write a note on traditional knowledge based digital library. 10
6. Give a detailed account on Patenting Biotechnological inventions. Discuss the moral issues in Patenting Biotechnological inventions. 10
7. Write a note on Protection of Plant Varieties and Farmer's Rights Act, 2001. Describe the National gene bank. 10

—×—