



UNIVERSITY OF NORTH BENGAL
B.Sc. Honours 3rd Semester Examination, 2020

SEC1(P1)-BOTANY

Full Marks: 60

ASSIGNMENT

*The figures in the margin indicate full marks.
All symbols are of usual significance.*

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

PAPER-I

BIOFERTILIZER

Answer any *six* questions of the following each within 400 words 10×6 = 60

1. Give a comprehensive account of organic farming with special emphasis on bio-compost. 10
2. Discuss in detail the role of microbes in bio-fertilizer production. 10
3. Give an account of the different types of Mycorrhizal associations that you have studied mentioning the significance of each type of association. 10
4. Discuss *Azolla* and *Anabaena azollae* association and significance of their application in rice fields. 10
5. Discuss the isolation, identification and mass multiplication of *Rhizobium*. 10
6. Write an essay on re-cycling of different types of bio-degradable wastes. 10
7. Write notes on the following: 5+5
 - (a) Green manure
 - (b) Applications of blue green algae

PAPER-II

HERBAL TECHNOLOGY

Answer any six questions of the following each within 400 words

10×6 = 60

1. Write the scientific name, family and medicinal uses of-
(i) Tulsi
(ii) Ginger
(iii) Fenugreek
(iv) Indian Goose berry
(v) Ashoka. 10
2. Define drug adulteration. Mention different types of drug adulteration. Write a note on various methods of drug evaluation. 10
3. Write an essay on different types of secondary metabolites found in plants and mention their pharmacological properties. 10
4. What is 'ED50' value? Discuss in detail phytochemical screening test for Flavonoids and phenolic compounds. 10
5. Describe the role of micropropagation of *Withania somnifera*. Briefly describe the biological evaluation of drug. 5+5
6. Discuss briefly about the history and scope of Herbal medicine. Write a note on cultivation – harvesting – processing – storage – marketing and utilization of medicinal plants. 10
7. "Herbal food – Future of pharmacognosy" — Elaborate. 10

PAPER-III

NURSERY AND GARDENING

Answer any six questions of the following each within 400 words

10×6 = 60

1. Discuss the planning and different types of seasonal activities taking place in a nursery and mention their importance. 10
2. Give a detailed account of the causes and methods used for breaking dormancy. 10
3. Discuss the different methods of vegetative propagation most commonly used in nurseries and gardening along with precautions. 10
4. Give an account of the cultivation process of lady's finger. 10
5. Write an essay on seed bank and its importance. 10

6. Write an essay on factors affecting seed viability mentioning your suggestions to raise best quality viable seeds. 10
7. Define pests and discuss the different strategies commonly used in management of pests and diseases in nursery and gardening. 10

PAPER-IV

FLORICULTURE

Answer any six questions of the following each within 400 words 10×6 = 60

1. Write an essay on the importance and scope of floriculture and landscape gardening. 10
2. Discuss in detail the different factors affecting cut flower production, packaging and post harvest care. 10
3. Give an account of the different methods used to prolong vase life of cut flowers. 10
4. Describe in detail the different steps involved in cultivation of Rose. 10
5. Discuss the different diseases and pests of ornamental plants and their control measures. 10
6. Describe the different techniques of making Bonsai. 10
7. Discuss the different methods of Sexual and Vegetative propagation. 10

PAPER-V

MEDICINAL BOTANY

Answer any six questions of the following each within 400 words 10×6 = 60

1. Discuss the conservation of endangered and endemic medicinal plants in detail. 10
2. Give an account of the scope and importance of Nursery for the propagation of medicinal plants. 10
3. Discuss how ethno-botany can be used as a tool to protect the interest of different ethnic groups. 10
4. Discuss the role of sacred groves in conservation of plant genetic resources. 10
5. Discuss the origin and basis of Siddha medicinal system and its relevance in modern system of medicine. 10

6. Give a brief account of the uses of natural products in the treatment of diabetes and infertility. 10
7. Discuss the role of Botanic Gardens and National Parks in conservation of different plant species. 10

PAPER-VI

PLANT DIVERSITY AND HUMAN WELFARE

Answer any six questions of the following each within 400 words 10×6 = 60

1. Write an essay on diversity of wild taxa and their economic and ecological significance. 10
2. Biodiversity conservation practices in which level – genetic, species or ecosystem diversity should be emphasized and why? 10
3. What happens to a plant species when genetic diversity is lost? What measures can be taken to manage the loss of genetic diversity? 10
4. Explain how biodiversity awareness programmes play a crucial role in ecosystem conservation. 10
5. What is NBPGR? How does NBPGR function towards management of biodiversity? 10
6. Give an account of beneficial uses of microbes. 10
7. Write short notes on: 5×2
 - (i) Beneficial and commercial aspects of forestry
 - (ii) Loss of agrobiodiversity

PAPER-VII

ETHNOBOTANY

Answer any six questions of the following each within 400 words 10×6 = 60

1. Discuss in detail the importance of archaeological findings and ancient literature in the study of ethnobotany. 10
2. Write an essay on objectives, scope and relevance of ethnobotany in the present context. 10
3. State the importance of following plants in ethnobotanical practices- 10
 - (i) *Ocimum sanctum*, (ii) *Indigofera tinctoria*

4. What is IPR? Explain the importance of traditional knowledge in modern life. 10
5. Write short notes on the following – 5×2
(i) Bio-piracy, (ii) Tribals of India
6. Write the scientific names and family of plants belonging to the following categories as used by the tribal people: 10
(i) Food Plants
(ii) Intoxicants
(iii) Beverage
(iv) Resins
7. Discuss in detail the role of ethnobotany in modern medicine with special examples. 10

PAPER-VIII

MUSHROOM CULTURE TECHNOLOGY

Answer any six questions of the following each within 400 words

10×6 = 60

1. Discuss the different steps involved in the successful cultivation of oyster mushroom. 10
2. Give a detailed account of the preparation of spawn. 10
3. Write an essay on the nutritional and medicinal values of edible mushrooms. 10
4. Discuss the food values of mushrooms mentioning the different types of food items prepared and comment on their export value. 10
5. Discuss the different types of long and short term storage techniques commonly used for storage of mushrooms. 10
6. Discuss the various factors affecting mushroom bed preparation. 10
7. Describe the basic infrastructure of a standard mushroom house. 10

PAPER-IX

INTELLECTUAL PROPERTY RIGHT

Answer any six questions of the following each within 400 words

10×6 = 60

1. What do you understand by traditional knowledge library? State the objectives of traditional knowledge library. Define the role of Sui-generis regime in protection of traditional knowledge. 2+4+4

2. Discuss in detail the moral issues in patenting biotechnological inventions. 10
3. Discuss in detail the concept, types and economic importance of intellectual property right. 10
4. Discuss the procedure for obtaining patents. With examples, list the items, which can not be patented under the Indian Patent Act. 6+4
5. Give a brief account of Patent Act 1970 with special reference to its amendments. 10
6. Write short notes on: 5×2
 - (i) Bioprospecting
 - (ii) National gene bank.
7. How does protection of plant varieties take place in India? Explain the term 'Biopiracy'. 6+4

—×—