



'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 4th Semester Examination, 2023

SEC1-P2-TEA SCIENCE

Time Allotted: 2 Hours

Full Marks: 60

The figures in the margin indicate full marks.

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

PAPER-I

PLANT DIVERSITY AND HUMAN WELFARE

GROUP-A

1. Answer any **four** questions from the following: 3×4 = 12
- (a) What is Ecosystem? 3
 - (b) Write an importance of Biodiversity. 3
 - (c) What is Hotspots? 3
 - (d) Write the function of seed bank. 3
 - (e) What is sustainable development? 3
 - (f) Write any three names of Timber wood plants. 3

GROUP-B

2. Answer any **four** questions from the following: 6×4 = 24
- (a) Give an account of important food and medicinally useful plants in plant diversity. 6
 - (b) Write a short note on Species diversity. 6
 - (c) Write an account of importance of Avenue trees. 6
 - (d) Briefly describe the processes responsible for species extinction. 6
 - (e) Write a short note on loss of agrobiodiversity. 6
 - (f) What are the roles of educational institution in Biodiversity Conservation? 6

GROUP-C

3. Answer any **two** questions from the following: 12×2 = 24
- (a) What are the importance of forestry and their utilization in commercial aspects? 6+6
 - (b) What are the different types of Conservation? Describe with suitable examples. 12
 - (c) Short notes: 6+6
 - (i) Ethical and aesthetic values of Biodiversity
 - (ii) Wood and its uses.
 - (d) Describe the concept of sustainable development with suitable examples. 12

PAPER-II
DISASTER MANAGEMENT

1. Answer any **four** questions from the following: 3×4 = 12
- (a) What is disaster waste management? 3
 - (b) Write about disaster relief. 3
 - (c) What is man-made disaster? 3
 - (d) What is Natural disaster? 3
 - (e) Why flood is considered as disaster? 3
 - (f) How can you reduce disaster risk? 3
2. Answer any **four** questions from the following: 6×4 = 24
- (a) How is public awareness and planning related to disaster management? 6
 - (b) Write about cause and consequence of any one man-made disaster. 6
 - (c) Describe the components of disaster relief. 6
 - (d) Write about post disaster rehabilitation. 6
 - (e) Explain the requirement of planning to reduce disaster impacts on humans. 6
 - (f) Do you consider refugee problem as disaster? — Explain. 6
3. Answer any **two** questions from the following: 12×2 = 24
- (a) Write about Disaster Management Act, 2005. 12
 - (b) Write about social and environmental consequences of disaster. 12
 - (c) Differentiate between Man-made and Natural disaster. Explain the management of one man-made and one natural disaster. 4+8
 - (d) Describe post disaster medical aid and waste management. 12

PAPER-III
NURSERY AND GARDENING
GROUP-A

1. Answer any **four** questions from the following: 3×4 = 12
- (a) What is tea nursery?
 - (b) What is bud dormancy?
 - (c) What do you mean by transplanting of seedlings?
 - (d) Write a note on genetic erosion.
 - (e) What is seed bank?
 - (f) Write the objectives of seed certification.

GROUP-B

2. Answer any **four** questions from the following: 6×4 = 24
- (a) Write short notes on the following:
 - (i) Mist chamber
 - (ii) Shade house.

- (b) What are different types of gardening? Discuss in brief.
- (c) Define seed viability. Discuss the factors affecting seed viability.
- (d) Discuss the management of pest and diseases in gardens.
- (e) Describe different methods of breaking seed dormancy.
- (f) Write a note on seed testing and certification.

GROUP-C

3. Answer any *two* questions from the following: 12×2 = 24
- (a) Write a detail account of vegetative propagation in plants.
 - (b) Discuss gardening and gardening operation.
 - (c) Draw a labelled diagram of structure of seed. Write the causes of seed dormancy. Discuss the methods to break dormancy.
 - (d) Write a detail account of nursery management.

PAPER-IV

FRESH WATER AND FISH CULTURE

GROUP-A

1. Answer any *four* questions from the following: 3×4 = 12
- (a) Write a short note on Bundh Breeding in carps.
 - (b) Write a note on the bacterial community in ponds.
 - (c) Briefly explain the natural resistance of fish to prevent infectious diseases.
 - (d) What do you mean by formulated feed?
 - (e) Write a short note on the immune system of fishes.
 - (f) Write a note on freshwater aquatic weeds.

GROUP-B

2. Answer any *four* questions from the following: 6×4 = 24
- (a) Briefly explain the purposes of aquaculture. 6
 - (b) Write a brief note on fish stock population. 6
 - (c) Write a short note on stress response in fishes. 6
 - (d) Write a short note on the selection of species for fish culture. 6
 - (e) Write a short introduction about aquatic insects. 6
 - (f) Write about the biology of important airbreathing fishes. 6

GROUP-C

3. Answer any *two* questions from the following: 12×2 = 24
- (a) Write a detailed account on the water temperature for carp culture.
 - (b) Explain in detail on the factors influencing feeding of fishes.
 - (c) Write a detailed note on the different infectious diseases of fishes.
 - (d) Explain in detail the advantages of finfish culture.

PAPER-V
INTELLECTUAL PROPERTY RIGHTS

GROUP-A

1. Answer any *four* questions from the following: 3×4 = 12
- (a) What do you mean by GI?
 - (b) What is logo?
 - (c) What do you mean by brand names?
 - (d) Mention some names of GI product from India.
 - (e) Briefly explain certification marks.
 - (f) What do you mean by copyrights?

GROUP-B

2. Answer any *four* questions from the following: 6×4 = 24
- (a) Write a detailed note on different kinds of marks. 6
 - (b) Write a short note on traditional knowledge. 6
 - (c) Write a brief note on plant variety protection. 6
 - (d) Explain GI's term of protection. 6
 - (e) What are the duties of patentee? 6
 - (f) Write a brief account on elements of patentability. 6

GROUP-C

3. Answer any *two* questions from the following: 12×2 = 24
- (a) Write a detailed account about IPR in India. 12
 - (b) Write about the different GI products of India. 12
 - (c) Describe the different patent offices available in India and explain its role in patent filing. 12
 - (d) Write in detail about registration of novel and original design. 12

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