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(NEP-2020)

(2nd Semester)

BOTANY (MAJOR/MINOR)

(Plant Ecology and Environmental Biology)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(SECTION : A—OBJECTIVE)

(Marks : 10)

Tick (✓) the correct answer in the brackets provided :

1×10=10

1. In an ecosystem, several food chains linked to form an interlocking pattern is called

(a) food chain ()

(b) food web ()

(c) ecological pyramid ()

(d) trophic level ()

2. The study of interaction between individual species with their environment is called
- (a) autecology ()
 - (b) synecology ()
 - (c) cooperation ()
 - (d) forest ecology ()
3. Pyramid of biomass is inverted in
- (a) desert ecosystem ()
 - (b) forest ecosystem ()
 - (c) grassland ecosystem ()
 - (d) pond ecosystem ()
4. Energy flow in an ecosystem is
- (a) unidirectional ()
 - (b) bidirectional ()
 - (c) multidirectional ()
 - (d) circular ()
5. Plant succession on sand is known as
- (a) xerosere ()
 - (b) lithosere ()
 - (c) psammosere ()
 - (d) hydrosere ()
6. Which of the following is not a site for *in situ* method of conservation of flora?
- (a) Biosphere reserve ()
 - (b) Sanctuary ()
 - (c) Reserved forest ()
 - (d) Botanical garden ()

7. Which one of the following is commonly found in the alpine zone of the Himalaya?

(a) *Clerodendrum* sp. ()

(b) *Juniperus* sp. ()

(c) *Tectona* sp. ()

(d) *Mangifera* sp. ()

8. Which of the following is the principal cause of acid rain?

(a) Increased UVB ()

(b) High SO₂ level in atmosphere ()

(c) Rise in all greenhouse gases ()

(d) Ozone depletion ()

9. The damaged ozone layer is situated in

(a) ionosphere ()

(b) mesosphere ()

(c) stratosphere ()

(d) troposphere ()

10. Which of the following processes of soil conservation is called 'mulching'?

(a) Rocks are piled up to slow down the flow of water ()

(b) Different crops are grown in alternate rows to protect the soil from rain-wash ()

(c) The bare ground between plants is covered with a layer of organic matter like straw ()

(d) Stone, grass and soil are used to build barriers along contours ()

(SECTION : B—SHORT ANSWERS)

(Marks : 15)

Write short notes on *five* of the following, taking at least *one* from each unit :

3×5=15

UNIT—I

1. Life forms
2. Abiotic components of ecosystem

UNIT—II

3. Importance of carbon cycle
4. Biological invasions

UNIT—III

5. Hotspot of biodiversity
6. Shannon diversity index

UNIT—IV

7. Radioactive waste disposal
8. Biomagnification

(SECTION : C—DESCRIPTIVE)

(Marks : 50)

Answer *five* of the following questions, taking at least *one* from each unit :

10×5=50

UNIT—I

1. What is population? Give an account on various characteristics of population. 2+8=10
2. Discuss the trophic level and food chain in an ecosystem. 10

UNIT—II

3. What is biogeochemical cycle? Discuss the cycling of phosphorus in environment. 2+8=10
4. What is ecological succession? Give an account on general process of succession in nature. 2+8=10

UNIT—III

5. What is biodiversity loss? Describe in brief the *ex situ* and *in situ* conservations. What are the causes of loss of biodiversity? 2+4+4=10
6. Write on the following in brief : 5+5=10
 - (a) Endemism
 - (b) Floristic region of North-East India/Assam

UNIT—IV

7. What are renewable and non-renewable natural resources? Describe the major types of renewable natural resources and their associated problems. 3+7=10
8. Answer/Write on the following : 5+5=10
 - (a) Describe in brief the various measures of water conservation.
 - (b) Greenhouse effect
