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AC-234812

M.Sc. (Semester-II)
Examination, Dec.-Jan (2025-26)

MICROBIOLOGY
(Ecology and Biodiversity)

Time Allowed : Three Hours

Maximum Marks : 70

Note : This question paper is divided into four sections. All sections are **compulsory**. Attempt questions as per instructions given in each section. Distribution of marks is given in each section.

SECTION-A

(Objective Type Questions)

Note : Attempt **any ten** questions. Each question carries 1 mark.

[10×1=10]

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(1)

[P.T.O.]



1. (A) Fill in the blanks :
- (i) First Biosphere Reserve of India is _____.
 - (ii) Full form of PAN in biodiversity conservation is _____.
 - (iii) Species that initially colonize at the initial phase of succession is known as _____ species.
 - (iv) Full form of MAB is _____.
 - (v) Opportunistic species is also known as _____ species.
- (B) Multiple Choice Questions :
- (vi) What are the three key levels of biodiversity?
 - (a) Genetic, species and biome
 - (b) Molecular, species and biome
 - (c) Genetic, population and ecosystem
 - (d) Genetic, species and ecosystem
 - (vii) The pyramid of energy is always :
 - (a) Upright
 - (b) Inverted
 - (c) Bell shaped
 - (d) Urn shaped

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- (viii) In an inverted biomass pyramid, the base consist of :
 - (a) Large producers
 - (b) Small producers
 - (c) Carnivores
 - (d) Decomposers
- (ix) For documenting rare and endangered species of animals and plants what is established ?
 - (a) Green data book
 - (b) Blue data book
 - (c) Red data book
 - (d) None of the above
- (x) _____ refers to biological magnification.
 - (a) System where consumption of various food exists
 - (b) Ecosystem where the micro and macro organisms live
 - (c) The number of levels in the food web
 - (d) Increase in the concentration of toxin as we move to the top of food web

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[P.T.O.]



(xi) Which of the following statements about Ozone is correct?

- (a) Ozone is beneficial in the troposphere but harmful in stratosphere
- (b) Ozone is beneficial in the stratosphere but harmful in the troposphere
- (c) Ozone is beneficial for both stratosphere and troposphere
- (d) Ozone is harmful for both stratosphere and troposphere

(xii) What type of pollution is indicated by Lichens?

- (a) Water
- (b) Air
- (c) Noise
- (d) Soil

SECTION-B

(Very Short Answer Type Questions)

Note : Attempt any five questions. Each question carries 02 marks. (Word limit : 25-30 words) [5×2=10]

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- 2.
- (i) Differentiate between Habitat and Niche.
 - (ii) Why energy flow in ecosystem is unidirectional?
 - (iii) What is Ecesis?
 - (iv) What is species richness?
 - (v) What is Genebank?
 - (vi) What is Ecological Invasion?
 - (vii) Define Endangered species.

SECTION-C

(Short Answer Type Questions)

Note : Attempt any five questions. Each question carries 04 marks. (Word limit : 250 words) [5×4=20]

- 3.
- (i) Write a note on Niche overlap.
 - (ii) Explain the concept of Climax.
 - (iii) Comment on habitat loss and fragmentation.
 - (iv) Briefly discuss about seedling banks.
 - (v) Explain the term character displacement with example.

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[P.T.O.]



- (vi) Comment on human intervention and biodiversity loss.
- (vii) Write short note on Values of Biodiversity.

SECTION-D

(Long Answer Type Questions)

Note : Attempt any three questions. Each question carries 10 marks. (Word limit : 500 words) [3×10=30]

4. (i) Define the term ecological succession. Provide a brief illustration of different types of ecological succession. [2+8]
- (ii) Define the term biodiversity conservation. Briefly discuss about the different categories of IUCN red data book. [2+8]
- (iii) What are the threats to biodiversity? Briefly discuss about the various ex-situ conservation centres of India. [4+6]
- (iv) Give a comparative account of r and K selected species. Add a note on population growth curve. [5+5]

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(6)