

M.Sc. (Micro) Semester - 3 (CBCS) Examination**Nov/Dec-2023 (NEW COURSE)****Ecology and Environmental Microbiology (Elective (New))****Time: 2:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

SECTION-I**Que-1 Answer the following questions.**

(A) Write a short note on population ecology. (07)

(B) Describe briefly competition and symbiosis as a mode of species interactions. (07)

OR

Que-1 Explain in detail the biotic and abiotic environmental factors with suitable examples. (14)**Que-2 Answer the following questions.**

(A) Write a note on the major terrestrial biomes of India. (07)

(B) Explain some common strategies for biodiversity conservation. (07)

OR

Que-2 Discuss in detail the carbon and nitrogen cycle. (14)**Que-3 Do as direct (Attempt any seven out of eight questions each of one mark)** (07)

(1) What is the significance of the edge/ecotone concept?

(2) What is the importance of species diversity measurement?

(3) What is the difference between herbivores and carnivores?

(4) What causes metapopulations?

(5) What is biogeography?

(6) What are the key factors affecting bioremediation?

(7) What is the concept of primary production?

(8) Enlist any four types of environmental pollution.

SECTION-II**Que-1** Discuss the management strategies of municipal and agricultural solid waste. (14)

OR

Que-1 Answer the following questions.

(A) Write a short note on bioremediation of xenobiotics. (07)

(B) Explain bioaugmentation and biostimulation. (07)

Que-2 Discuss chemical, biological and molecular methods of monitoring pollution. (14)

OR

Que-2 Answer the following questions.

(A) Write a note on environmental impact assessment. (07)

(B) Explain microbial-enhanced oil recovery and its advantages. (07)

Que-3 Do as direct (Attempt any seven out of eight questions - each of one mark). (07)

(1) What is biosorption?

(2) What is flocculation?

(3) What is activated sludge?

(4) What is the composition of petroleum?

(5) Enlist properties of biosurfactants.

(6) What are the main sources of biofertilizers?

(7) Give examples of fungal biopesticides.

(8) Enlist the disadvantages of GMOs.
