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Library
Department of Allied Health Sciences
Brainware University
Barasat, Kolkata- 700125

BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – M.Sc.(MB)-2025

Course Name – Environmental Microbiology

Course Code - MMB27505 (T)

(Semester II)

Full Marks : 40

Time : 2:0 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 10=10

1. Choose the correct alternative from the following :

- (i) Choose the method suitable for counting both live and dead cells
 - a) Standard plate count
 - b) MPN
 - c) Direct microscopic count
 - d) Colony hybridization
- (ii) Interpret the process that supplies air to stimulate microbes.
 - a) Bioventing
 - b) Bioleaching
 - c) Biofiltering
 - d) Photolysis
- (iii) Choose how bioaugmentation improves bioremediation
 - a) Increase water holding capacity
 - b) Add heat
 - c) Increase degradative microbial population
 - d) Decrease oxygen
- (iv) Predict why bioleaching is not used everywhere
 - a) Works instantly
 - b) Works for all contaminants
 - c) Needs specific microbes and conditions
 - d) Does not need monitoring
- (v) Choose the largest terrestrial biome in India.
 - a) Desert
 - b) Savanna
 - c) Tropical dry deciduous forest
 - d) Alpine meadows
- (vi) Interpret which is true about phenology.
 - a) Study of animal fossils
 - b) Study of seasonal biological events
 - c) Study of population genetics
 - d) Study of ocean currents
- (vii) Identify which biome is found in the Thar region
 - a) Alpine meadow
 - b) Desert biome
 - c) Mangrove biome
 - d) Tropical wet evergreen forest
- (viii) Point out an Indian conservation success story
 - a) Extermination of tiger
 - b) Silent Valley project saving rainforest
 - c) Extinction of rhino
 - d) Drying up of Chilika lake
- (ix) Select the biome absent in central India

- a) Moist deciduous forest
- b) Thorn forest
- c) Tundra
- d) Mangrove
- (x) Select the bacteria that oxidize ammonia to nitrite
- a) Nitrobacter
- b) Azotobacter
- c) Nitrosomonas
- d) Clostridium

Group-B

(Short Answer Type Questions)

3 x 5=15

- 2. State one importance of aerobic sewage treatment. (3)
- 3. Explain why water pollution is harmful. (3)
- 4. Explain the mechanism of one pesticide degraded by microbes. (3)
- 5. Define the phyllosphere and state its significance. (3)
- 6. Evaluate the role of persistent organic pollutants. (3)

OR

State the importance of biosurfactants. (3)

Group-C

(Long Answer Type Questions)

5 x 3=15

- 7. Discuss the advantages of using mycorrhizae in sustainable agriculture. (5)
- 8. Explain the role of local communities in conservation and analyze an Indian case study. (5)
- 9. Assess the effectiveness of bioventing and biofiltration in treating contaminated air and soil. (5)

OR

Describe the process of bioaugmentation and critically analyze its advantages and limitations. (5)

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