BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – M.Sc.(BT)-2022/M.Sc.(BT)-2023
Course Name – Environmental Biotechnology
Course Code - MBTE304
(Semester III)

Full Marks : 60 **Time : 2:30 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 15=15

1. *Choose the correct alternative from the following :*

(i) Define sustainable development
- a) Encourages environmentally economic growth
- b) Discourages environmentally economic growth
- c) Encourages environmentally harmful and unsustainable forms of economic growth
- d) All of these

(ii) Interpret which of the following is a biodegradable waste?
- a) Plastics
- b) Polythene
- c) Glass
- d) None of these

(iii) Choose among the following that which of the following are sources of fluorine air pollution?
- a) Coal combustion
- b) Steel industries
- c) Phosphate fertiliser manufacturing
- d) All of the mentioned

(iv) Analyse that example of renewable exhaustible natural energy resource
- a) Coal
- b) Petroleum
- c) Kerosene
- d) Biomass

(v) State that a good example of sedimentary cycle is____
- a) Oxygen cycle
- b) Sulphur cycle
- c) Nitrogen cycle
- d) Phosphorus cycle

(vi) Interpret that Itai-itai disease is caused of
- a) Hg Poisoning
- b) Cd Poisoning
- c) Pb Poisoning
- d) Cu Poisoning

(vii) State which is not generally seen in biodiversity hotspots.
- a) Endemism
- b) Species richness
- c) Loss of diversity
- d) Lesser interspecific competition

(viii) Interpret that _____ is a non-renewable resource
- a) Crude oil
- b) Uranium

c) Hot spring d) Silica

(ix) Interpret that _____ is an example of an ex-situ conservation.

a) Sacred groves b) Wildlife sanctuary
c) Seed bank d) National park

(x) Dairy industry effluents are primarily characterized by

a) High solid content b) High nitrogen levels
c) High fat content d) High sugar content

(xi) The main pollutant in sugar industry effluents is

a) Lactic acid b) Phenolic compounds
c) Sucrose d) BOD (Biochemical Oxygen Demand)

(xii) The management of municipal solid waste focuses on

a) Collection only b) Recycling and disposal
c) Incineration only d) Landfilling only

(xiii) Resource management focuses on

a) Waste generation b) Efficient use of resources
c) Pollution control d) Deforestation

(xiv) The role of biodiversity in ecosystems includes

a) Promoting monoculture b) Enhancing resilience
c) Increasing pollution d) Reducing food sources

(xv) The Kyoto Protocol addresses the issue of

a) Ozone depletion b) Greenhouse gas emissions
c) Biodiversity loss d) Pesticide regulation

Group-B

(Short Answer Type Questions) 3 x 5=15

2. State the different types of biogeochemical cycles. (3)
3. Illustrate the principles of activated sludge treatment. (3)
4. Define phytostimulation, phytoextraction and phytoaugmentation. (3)
5. Classify the different modes of conservation of biodiversity. (3)
6. Explain the process of generation of biofuel from waste. (3)

OR

Analyze the effectiveness of biosurfactants compared to traditional surfactants in environmental remediation (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Elaborate on the grazing food chain, detailing its features and the flow of energy from producers to consumers. (5)
8. Infer the organic and inorganic chemicals responsible for environmental pollution. (5)
9. Examine the treatment methods used for effluents from dairy, distillery, sugar, and antibiotic industries. (5)
10. Justify the importance of biodiversity conservation in the context of environmental impact assessments. (5)
11. Interpret the relationship between UV-B radiation and ozone layer depletion. (5)
12. Write short note on 'Integrated waste management'. (5)

OR

Explain the principles of formation and working of biopesticides. (5)

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