

M.Sc. BIOTECHNOLOGY
THIRD SEMESTER
ENVIRONMENTAL BIOTECHNOLOGY
MBT-303

**SET
A**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 1hr. 30 mins.

Full Marks: 35

Time: 15 mins.

(Objective)

Marks: 10

Choose the correct answer from the following:

1×10=10

- High value of BOD indicates:
 - Lower water quality
 - More oxygen is required
 - Less oxygen for species to feed on
 - All of the above
- This cleanup approach includes removal of groundwater or soil from its natural setting to permit for bioremediation:
 - Bioaugmentation
 - in situ bioremediation
 - ex situ bioremediation
 - Phytoremediation
- A major microbe used in bioleaching for copper recovery is:
 - Thiobacillusferrooxidans*
 - Pseudomonas aeruginosa*
 - Aspergillusniger*
 - Staphylococcus aureus*
- The process of burning municipal solid wastes under suitable temperature and conditions in a specific furnace is called.....
 - Vermicomposting
 - Incineration
 - Landfill
 - Burning
- Which of the following wastes is called the Municipal Solid Waste (MSW)?
 - Food wastes
 - Wood pieces
 - Plastic cans
 - All of the above
- A trickling filter is primarily a:
 - Straining process to remove suspended solids from sewage
 - Straining process to remove turbidity from water
 - Biological oxidation process to remove BOD from sewage
 - Straining process to remove bacteria from water
- Where are extremophiles found?
 - Only in Antarctica
 - Only in hot springs
 - Only in acidic environments
 - In a variety of extreme conditions
- Which of the following is not an example of synthetic biodegradable polymer?
 - Polyvinyl alcohol
 - Poly gamma-glutamic acid
 - Polyanhydrides
 - PHBV

9. Which of the following bacterium is found in extreme saline conditions?
- a. *Eubacteria*
 - b. *Mycobacteria*
 - c. *Archaeobacteria*
 - d. *Cyanobacteria*
10. Which technique separates charged particles using electric fields?
- a. Hydrolysis
 - b. Protein synthesis
 - c. Electrophoresis
 - d. Protein denaturing

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(Descriptive)

Time : 1 hr. 15 mins.

Marks : 25

[Answer question no.1 & any two (2) from the rest]

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|---|--------|
| 1. Explain MEOR technique with proper diagram. | 5 |
| 2. Explain the process of composting. | 10 |
| 3. Explain any two process of anaerobic secondary treatment of waste water. | 10 |
| 4. Explain FAME analysis and DGGE technique. | 5+5=10 |
| 5. Explain extremophiles in details with examples. | 10 |

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