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18BT821

## Eighth Semester B.E. Degree Examination, Dec.2023/Jan.2024 Environmental Biotechnology

Time: 3 hrs.

Max. Marks: 100

**Note: Answer any FIVE full questions, choosing ONE full question from each module.**

### Module-1

- 1 a. Describe on the various sources of Water , Soil and Air pollution and their Human Health effects. (10 Marks)
- b. Write short note on : (10 Marks)
  - i) Bioaccumulation
  - ii) Biosorption.

**OR**

- 2 a. Discuss on the sources of Heavy metal pollution and microbial usage in Heavy metal contamination removal. (10 Marks)
- b. Describe on the mechanism of detoxification mechanism of water pollution with Heavy metal like lead and mercury. (10 Marks)

### Module-2

- 3 a. Elaborate on the anaerobic treatment of wastewater from different sources of contamination. (10 Marks)
- b. Discuss on the process of Acetogenesis and Methanogenesis. (10 Marks)

**OR**

- 4 a. Highlight on the use of Genetically Engineered Organisms for the waste water treatment. (10 Marks)
- b. How Fermentative Bacteria's are essential in coming out Acetogenesis and Methanogenesis process? (10 Marks)

### Module-3

- 5 a. Describe on different methods involved in water conservation. (10 Marks)
- b. How do Climate change and Global warming can affect the life of people? (10 Marks)

**OR**

- 6 a. Explain on the role of Non – governmental Organization in Environmental issues and possible solution for it. (10 Marks)
- b. Write short note on : (10 Marks)
  - i) Rain Water Harvesting
  - ii) Ozone Layer depletion.

### Module-4

- 7 a. Enumerate on the different forest resources their use and over – exploitation of the resources. (10 Marks)
- b. Write short note on : (10 Marks)
  - i) Timber extraction
  - ii) Mining.

**OR**

- 8 a. Elaborate and discuss in detail on different land resources and land resources problems faced by environment. (10 Marks)
- b. Write short note on :
- i) Soil Erosion and landslides ii) World food problem. (10 Marks)

**Module-5**

- 9 a. Explain in detail the direct and indirect mechanism of Bio-oxidation process. (10 Marks)
- b. Discuss the application of microorganisms for field biodegradation of Hazardous materials. (10 Marks)

**OR**

- 10 a. Describe the process of Extraction of metals from their respective ores solutions. (10 Marks)
- b. Explain in detail on the Petroleum Extraction process using microorganisms – Microbial Enhanced Oil Extraction [MEDE]. (10 Marks)

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