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18BT751

**Seventh Semester B.E. Degree Examination, July/August 2022**  
**Biotechnology for Sustainable Environment**

Time: 3 hrs.

Max. Marks: 100

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

**Module-1**

- 1 a. Discuss the sources of portable water and its use. (08 Marks)  
b. State and central government set the standards for drinking water. Why? (04 Marks)  
c. "Certain physical characteristics of water determine it to be used for consumption."  
Elaborate the statement emphasizing physical characteristics. (08 Marks)

**OR**

- 2 a. The wastewater is produced via various means. Explain the ways in which water gets polluted. (08 Marks)  
b. Discuss the chemical characteristics of water to be used for consumption emphasizing the permissible limits and desired limits. (06 Marks)  
c. Biotechnological approaches are incorporated to purify water. Justify. (06 Marks)

**Module-2**

- 3 a. With a neat labelled diagram, enumerate the primary wastewater treatment methods. (10 Marks)  
b. Discuss the use of ultrafiltration and activated carbon in water treatment. (10 Marks)

**OR**

- 4 a. Explain the wastewater treatment process of effluent produced from dairy industry. (10 Marks)  
b. Treated sludge can be used as fertilizer. Explain with a neat diagram. (05 Marks)  
c. Explain Electrodialysis cell used in water purification. (05 Marks)

**Module-3**

- 5 a. Air pollution has an effect on health and vegetation – uphold the statement. (08 Marks)  
b. Discuss the ambient and stack sampling methods to monitor air quality. (06 Marks)  
c. State and explain any three examples of device used to measure noise. (06 Marks)

**OR**

- 6 a. Give an account of air pollutants and its effects. (06 Marks)  
b. Describe the equipments used for particulates and gaseous pollutant control. (08 Marks)  
c. State applications of Noise Control Equipments. (06 Marks)

**Module-4**

- 7 a. Differentiate renewable and non-renewable sources of fuels. (10 Marks)  
b. Discuss the production of syngas as fuel. (10 Marks)

OR

- 8 a. Articulate the impacts of conventional and modern fuels. (10 Marks)  
b. Discuss the production of biofuel from Jetropha. (10 Marks)

Module-5

- 9 a. Explain solid waste management. (08 Marks)  
b. Discuss the solid waste management process involved in paper and pulp industry. (08 Marks)  
c. Which are the three 'R' s efficient in solid waste management? (04 Marks)

OR

- 10 a. Discuss the types and sources of solid wastes. (10 Marks)  
b. How is solid waste managed in pharmaceutical industry? (10 Marks)

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