

1129

B.Sc. (Hons.) Biotechnology

Fifth Semester

BIOT-Sem-V-III-T: Environmental Biotechnology

Time allowed: 3 Hours

Max. Marks: 67

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting one question from each Unit.

x-x-x

I. Attempt the following:-

- a) Components of Environment (2)
- b) Greenhouse gases (2)
- c) Aerosols (2)
- d) Gasohol (3)
- e) Biosorption (3)
- f) Primary treatment of Wastewater (3)

**UNIT – I**

II. a) Differentiate Renewable and Non renewable energy sources. Discuss environmental impacts of fossil fuels.

b) What are the various physicochemical parameters for soil analysis? How will you analyse Nitrogen and Organic Carbon content of soil? (6,7)

III. a) Write a note on Noise pollution, its impact on human health and its control.

b) Define Air Pollution. Give a detailed account of types of air pollutants, their sources and effects. (6,7)

**UNIT – II**

IV. a) What are the basic differences in microbiology of aerobic and anaerobic waste water treatment? Write a note on UASB.

b) Discuss methods involved in measurement of water pollution. (6,7)

V. a) Describe Trickling Filters and Rotating Biological Contactors.

b) What are various sources of water pollution? Discuss in detail municipal waste water treatment strategy. (6,7)

**UNIT – III**

VI. a) What is Bioremediation? Give differences between In situ and ex situ Bioremediation?

b) Give a detailed account of Rhizobium as a biofertiliser highlighting its fertilizer property and its manufacturing process. (6,7)

(2)

- VII. a) What is Integrated Pest Management? Discuss role of bioinsecticides in IPM.  
b) What are chemical insecticides? Give examples. How does their overuse affects environment. (6,7)

**UNIT – IV**

- VIII. a) Discuss various types of solid wastes and their sources. Write a note on solid waste disposal.  
b) Define bioleaching? How is it used for Copper biomining? (6,7)
- IX. a) What are Bioindicators? What is the criteria for selecting an appropriate bioindicator? Give examples of different types of bioindicators.  
b) Write a note on Composting and Landfilling. (6,7)

x-x-x