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Total Number of Pages : 02

B.Tech

PBT7J001

7th Semester Regular Examination 2018-19

ENVIRONMENTAL BIOTECHNOLOGY

BRANCH : BIOTECH

Time : 3 Hours

Max Marks : 100

Q.CODE : E030

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10) (2 x 10)

- What do you mean by Super bug?
- What is electrochemical biosensor?
- What is Lagoon?
- What do you mean by bioventing?
- What is biofilm? Write its importance.
- Define apoenzyme and holoenzyme.
- What are allosteric enzyme?
- What is operon?
- What is plankton? Name two organisms.
- What is activated sludge?

Part- II

Q2 Focused-Short Answer Type Questions- (Answer Any EIGHT out of TWELVE) (6 x 8)

- What are biosensors? How are they used in environmental monitoring?
- What is biomining? Write different methods of biomining.
- Discuss about copper bioleaching.
- Briefly describe the anaerobic treatment of waste water and of sewage sludge.
- What are xenobiotic compounds? Briefly describe the various types of recalcitrant xenobiotic compounds and their hazards.
- Discuss about the mechanism of degradation of various types of hydrocarbons.
- What is vermicomposting? Write the working mechanism of vermicomposting?
- How competitive and non competitive inhibitions are important in enzyme action?
- What is Maechilis-Menten Kinetics? Derive a linear plot of Maechilis-Menten equation?
- What is bioplastic? How it can be produced?
- Describe schematically bioethanol production.
- Write a short note on stoichiometry.

Part-III

Long Answer Type Questions (Answer Any TWO out of FOUR)

Q3 Discuss in detail about microbial bioremediation. What are the factors that affect bioremediation? **(16)**

Q4 Give an illustrated account of biogas production and its applications. Write the Indian scenario for biogas technology. **(16)**

Q5 Outline the process of wastewater treatment which is followed in most of the large cities. **(16)**

Q6 What do you know about enzyme immobilization? Write the different methods of enzyme immobilization and its applications. **(16)**