(i) Printed Pages : 3] Roll No. .....

(ii) Questions : 9] **Sub. Code :** 0 5 7 4

**Exam. Code :** 0 0 0 6

# B.A./B.Sc. (General) 6th Semester Examination

# 1047

## BIOTECHNOLOGY (Elective)

## (Environmental and Fermentation Biotechnology)

## Paper : BIOT-Elect-Sem-VI-T

**Time : 3 Hours]** **[Max. Marks : 67**

*Note* :– Attempt *five* questions in all. Section C is compulsory. Attempt *two* questions each from Section–A and B.

### Section–A

1. (a) What are conventional fuels ? Discuss the impact of conventional fuels on environment.

(b) Discuss the activated sludge treatment process and its significance. 7,6

2. (a) Describe the characteristic of methanogenic bacteria and their role in biogas production ?

(b) Discuss the gasohol experiment briefly. 6,7

3. (a) Discuss the concept of biomining. Describe the process by giving example of any ore in detail.

(b) Discuss the microbial degradation of pesticide in detail alongwith an example. 7,6

4. (a) Give the basic concept of biofertilizers. Give the role of nitrogen fixing microbes in synthesis of biofertilizers.

(b) Discuss briefly BT toxin and its applications. 7,6

## Section–B

5. (a) Discuss principle of preservation. What are the different approaches used for long-term and short-term preservation of microbes ?

(b) What are the different methods applied for strain improvement programme in industry ? 7,6

6. (a) What is the method of isolation and screening of microbes of industrial importance ?

(b) What is a bioreactor ? Briefly describe major types of fermentations. 6,7

7. (a) Define the heat and mass transfer phenomenon in fermenters.

(b) Discuss the safety protocols to be used in fermentation industry. 7,6

8. (a) Define downstream processing. Discuss chromatographic methods used for downstream processing in detail.

(b) Describe methods for immobilization of enzymes. 6,7

## Section–C

9. (a) Describe primary treatment.

(b) Describe nitrification and denitrification.

(c) Write a note on submerged fermentation.

(d) Explain moist heat sterilization.

(e) Describe the characteristic of anti-foaming agent. 3×5=15