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

(ii) **Questions : 9**

Sub. Code : 0 5 7 3

Exam. Code : 0 0 0 6

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

(2042)

BIOTECHNOLOGY (Elective)

Paper : Environmental and Fermentation Biotechnology

BIOT-Elect-Sem.-VI-T

Time Allowed : Three Hours] **[Maximum Marks : 75**

Note :— Attempt **FIVE** questions in all selecting **TWO** questions from each Unit (I-II). Question No. 1 is compulsory.

1. Answer the following briefly :—

   (a) Bioleaching

   (b) Gasohol

   (c) Primary screening

   (d) Sparger

   (e) Biofuels

   (f) Aerobic degradation

   (g) Methanogenic bacteria

   (h) Cell disruption

   (i) Submerged fermentation

   (j) Corn steep liquor. $1\frac{1}{2} \times 10 = 15$

UNIT—I

2. (a) What are conventional fuels ? What are their disadvantages over modern fuels ?

   (b) Describe the strategies for treatment of municipal waste. 8+7=15

3. (a) Describe the biological methods for control of Insects. How microbial toxins act as natural pesticide ? Which microbes are exploited for the purpose ?

   (b) What do you know about biogas and microbial Hydrogen production ? 8+7=15

4. (a) Explain the microbiology of enrichment of ores.

   (b) Describe the symbiotically fixation of Nitrogen in nature and its significance. 8+7=15

5. (a) What are the biological methods for treatment of Industrial waste ? Discuss.

   (b) Describe the biodegradation of organic compounds with suitable examples. 8+7=15

UNIT—II

6. (a) Discuss the methods of strain improvement for production of metabolites.

   (b) Give a comparison of submerged, surface and continuous fermentation. 8+7=15

7. (a) What are the various control panels in a fermenter ? How Inoculum Development for Industrial fermentation ?

(b) Explain the main steps for upstream and downstream processing of an antibiotic production. 8+7=15

8. (a) Describe the chromatographic methods applicable for downstream processing of enzymes.

(b) How will you preserve a microbial culture of commercial use ? 8+7=15

9. (a) How will you manage safety in a fermentation laboratory ?

(b) What is the Del factor ? Give its significance.

(c) What do you know about primary and secondary metabolic designs ? 4+4+7=15