(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

(2053)

BIOTECHNOLOGY (Elective)

(Environmental and Fermentation Biotechnology)

Paper : BIOT–Elect-Sem-VI-T

Time Allowed : Three Hours] [Maximum Marks : 75

Note :— Attempt **five** questions in all selecting **two** each from Unit I & II. Question No. 1 is compulsory.

1. Answer the following briefly :

   (a) Composition of MSW

   (b) Flocculation

   (c) GLP

   (d) Mass transfer

   (e) Impellers

   (f) Depth filters

   (g) Surface fermentation

   (h) DO probe

   (i) Inoculum

   (j) Antifoam agents $10 \times 1\frac{1}{2} = 15$

UNIT—I

2. (a) Define modern fuels. Give their examples along with their impacts on the environment.

   (b) What are methanogenic bacteria ? Discuss their applications in the field of fuel production. 7½+7½

3. (a) Differentiate between renewable and non-renewable resources.

   (b) What do you know abut solar energy and its converters ? 7½+7½

4. (a) How Municipal waste can be treated biologically ? Discuss.

   (b) Write about the applications of microbes in the enrichment of ores with suitable examples. 7½+7½

5. (a) Explain the biodegradation of pesticides using microorganisms.

   (b) Write a note on Integrated Pest Management. 7½+7½

UNIT—II

6. (a) Describe the improvement of industrially important microbes by genetic manipulation.

   (b) What is the principle of sterilization ? How fermenters are sterilized ? 7½+7½

7. (a) What do you know about the redesigning of secondary metabolic pathways ?

   (b) What is media formulation ? Give the important properties of an ideal media for industrial fermentations. 7½+7½

8. (a) Discuss the various methods in practice for the cell disruption for recovery of products.

(b) Give an overview of the energetics of microbial growth in fermenters. 7½+7½

9. (a) What are the steps taken into consideration for the Upstream process ?

(b) For the ideal working of a fermenter which components are required ? Explain. 7½+7½