6th Semester Regular / Back Examination 2016-17
INDUSTRIAL MICROBIOLOGY AND ENZYME TECHNOLOGY
BRANCH: BIOTECH
Full Marks -70
Time: 3- Hours
Q.CODE: Z122
Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right-hand margin indicate marks.

1. **Briefly answer the following questions.** [2 x 10]

   (a) Define enzyme stabilization. Mention the techniques involved in it.

   (b) Give an example of biostat.

   (c) What is the enzyme that converts starch to disaccharide?

   (d) Write down the uses of lactic acid bacteria?

   (e) Mention the processes involved in carbon carbon bond formation.

   (f) Write down the importance of lysozyme.

   (g) What is surface culture method?

   (h) What do you mean by immobilization? Name two organic supports for immobilization.

   (i) Protease engineering plays an important role in detergent industry. Explain it.

   (j) Briefly mention the process of sterilization by autoclave.

2. What do you mean by media? Write down the criteria for media selection and the basic requirements for media formulation [2+8]

3. Write notes on the following [5+5]

   i. Over producing de-controlled mutants
   ii. Semisolid fermentation

4. **a)** Define Enzyme stabilization. Give details on conformational enzyme stabilization **[5]**

   b) Give detail on fed batch culture kinetics **[5]**

5. Differentiate between: **[5+5]**

   i. Submerged and Semisolid fermentation

   ii. Cross linking and Entrapment

6. Discuss in detail the steps involved in alcohol fermentation. What are the precautions to be taken during fermentation process? **[10]**

7. Describe in detail the applications of enzymes in analytical purposes and industry. **[10]**

8. **Write down short note on any two of the following:** **[5+5]**

   i. Acrylate pathway

   ii. Genetically engineered strain

   iii. Submerged culture

   iv. Site-directed mutagenesis