

2124  
M. E. (Bio-Technology)  
First Semester  
ME-BIO-103: Microbial Biotechnology

Time allowed: 3 Hours

Max. Marks: 50

**NOTE:** Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

I. Answer the following briefly:-

- a) Name the production strain and main substrate for inulinase enzyme.
- b) Mention the importance of biotherapeutics.
- c) What is the significance of high BOD of polluted water?
- d) Why is there a need for successive generations of antibiotics?
- e) Why is screening important in biotechnology research?

(5x2)

**UNIT - I**

- II. With the help of a suitable example explain the various steps of bioprospecting. (10)
- III. a) Detail the process of large scale production of beta-carotene.  
b) Describe the production of recombinant insulin (5,5)
- IV. Give the types, microbial production, purification and biotechnological applications of peroxidase enzyme. (10)

**UNIT - II**

- V. Define bioleaching. What are its advantages over chemical process? Explain the bioleaching of copper. (10)
- VI. a) Explain role of microorganisms in waste stabilization.  
b) Compare the physiological adaptations of psychrophiles and thermophiles. (5, 5)
- VII. Write notes on the following:-
  - a) Fuel cell
  - b) Halophiles
  - c) Biofertilizers
  - d) Biocontrol agents(4x2½)

x-x-x