Time : $2\frac{1}{2}$ Hours]   [Total Marks : **70**

1 Answer the following : (any **seven**)   2×7=14

(a) What are xenobiotic compounds?

(b) Why are microorganisms useful in the abatement of soil and water pollution?

(c) Why do properties of enzymes change upon immobilization?

(d) What is probe?

(e) Write principle of PCR.

(f) What is protoplast culture?

(g) Describe different types of culture media.

(h) What is the difference between explant and mother plants?

(i) What are four symptoms of Inflammation?

(j) What is sandwich ELISA ?

2 Answer the following : (any **two**)   2×7=14

(a) Describe any one method of enzyme immobilization and its application.

(b) What are the advantages of immobilized cells over enzymes in commercial biotransformation?

(c) Give an account of bacterial characteristics useful for their commercial applications.

3   (a)   Explain the role of RENs in biotechnology.   2×7=14

    (b)   Discuss various techniques of screening of recombinant
          DNA.

                          OR

3   Write short notes on the following :   2×7=14

    (a)   Vectors

    (b)   Gene library

4   (a)   Discuss the application of plant tissue culture   2×7=14
          in Biotechnology

    (b)   What is multiple shoot culture? Discuss its importance
          in regeneration of plants.

5   Write short notes on any two of the following: 2×7=14

    (a)   Monoclonal antibody

    (b)   Autoimmunity

    (c)   Immunoglobulin

    (d)   Hypersensitivity.

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