

AS/2051
BIOTECHNOLOGY AND HUMAN WELFARE
Paper-GE-2. BHB-9

Time : Three Hours]

[Maximum Marks : 74

Note : Attempt *two* questions each from Section A and B. Section C will be compulsory. In Section A and B, each question carries 11 marks and in Section C each question carries 2 marks. There are 15 questions in Section C.

SECTION-A

- I. How microbes are used for synthesis of polysaccharides ?
- II. Give the methods of antibiotic production in industries. Also give the method of checking antibiotic effect.
- III. Describe Biogeochemical cycle of Nitrogen and its advantages.
- IV. What type of interactions occur between plants and microbes ? Explain with examples.

SECTION-B

- V. Enlist some non-chlorinated pollutants. Describe microbial degradation of non-chlorinated aromatic solvents.

- VI. What type of agro waste is of importance in industry ? How it is used in industry for the production of certain beneficial products ? Explain taking the examples of molasses and peels.
- VII. How DNA finger printing helps solving theft crimes ?
- VIII. Explain the applications of gene therapy with any *one* example.

SECTION-C

- IX. Give a brief account of following :
- (a) Protein engineered enzymes/Proteins in market (give 4 examples).
 - (b) What is the significance of disulfide bonds while engineering a protein.
 - (c) What are the requirements/raw materials for alcohol production.
 - (d) Superovulation.
 - (e) Embryo Transfer.
 - (f) Agrobacterium based gene transfer in plants.
 - (g) Define PHB. Give raw materials for its production.
 - (h) Anaerobic digestion of waste.
 - (i) Metal degradation.

- (j) RTPCR.
 - (k) Site directed mutagenesis.
 - (l) Significance of Human Genome Project.
 - (m) Monodonal antibodies in diagnostics.
 - (n) Toxoid.
 - (o) Humanized antibodies.
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