



NS – 371

V Semester B.Sc. Examination, November/December 2016

(F + R/CBCS)

BIOTECHNOLOGY – V

Genetic Engineering and Environmental Biotechnology



Time : 3 Hours

Max. Marks : 70

**Instruction :** Draw *neat* labelled diagrams *wherever necessary*.

SECTION – A

I. Write short notes on the following :

(5×2=10)

- 1) p<sup>UC</sup> 19
- 2) Isoschizomers
- 3) Renewable resources
- 4) VAM
- 5) Southern blotting.

SECTION – B

II. Answer **any four** of the following :

(4×5=20)

- 6) Explain electroporation method of gene transfer.
- 7) What are restriction enzymes ? Explain the types.
- 8) Write a note on symbiotic nitrogen fixing bacteria.
- 9) Enumerate the differences between AGE and PAGE.
- 10) What is bioleaching ? Mention its applications.

SECTION – C

III. Answer **any three** of the following :

(3×10=30)

- 11) What is bio-remediation ? Explain the methods of bioremediation of contaminated soil.
- 12) Write notes on the following :
  - a) Immunological screening
  - b) Micro injection.

P.T.O.



- 13) Describe the production of recombinant insulin.
- 14) What are conventional fuels ? Enumerate their environmental impact.
- 15) What are vectors ? Explain bacteriophage as cloning vector.

#### SECTION – D

IV. Answer the following :

(10×1=10)

- 16) List any two uranium leaching microorganisms.
  - 17) What is annealing ?
  - 18) Name the antibiotic resistance markers in p<sup>BR 322</sup>.
  - 19) What are biopesticides ?
  - 20) Define Gasohol.
  - 21) Write the function of RNase H.
  - 22) What is genomic library ?
  - 23) What is reverse osmosis ?
  - 24) Write one application of M<sub>13</sub> bacteriophage.
  - 25) Give any two examples of methanogenic bacteria.
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V Semester B.Sc. Examination, Nov./Dec. 2016  
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BIOTECHNOLOGY – VI

Immunology and Animal Biotechnology



Time : 3 Hours

Max. Marks : 70

**Instruction :** Draw *neat* labelled diagrams *wherever* necessary.

SECTION – A

I. Write short notes on the following :

(5×2=10)

- 1) MALT.
- 2) Transgenic mice.
- 3) Immunogenicity.
- 4) PDGF.
- 5) DNA Vaccine.

SECTION – B

II. Answer **any four** of the following :

(4×5=20)

- 6) Differentiate between humoral and cell mediated immunity.
- 7) Write a note on the different types of natural media used in animal cell culture.
- 8) Describe the general structure of antibody molecule.
- 9) Describe the production of monoclonal antibodies.
- 10) Give an account of the classical pathway of complement system.

SECTION – C

III. Answer **any three** of the following :

(3×10=30)

- 11) Define immunity. Discuss the role of various cells involved in immune responses.
- 12) Define primary cell culture. Explain the process of primary cell culture in detail.

P.T.O.



- 13) Describe hypersensitivity. Explain the mechanism of type I and II hypersensitive reactions.
- 14) Explain the precipitation and hemagglutination types of antigen-antibody reactions.
- 15) Discuss the applications of Animal Biotechnology.

#### SECTION – D

IV. Answer the following :

(1×10=10)

- 16) What are paratopes ?
  - 17) What is EGF ?
  - 18) Mention the types of T-cells.
  - 19) Define subculturing.
  - 20) Name the person who developed ABO blood grouping.
  - 21) Mention any two methods of purification during downstream processing.
  - 22) Expand ELISA.
  - 23) What is the role of hypoxanthin in HAT selection ?
  - 24) Name the maternal antibody which passes through placenta.
  - 25) What are plantibodies ?
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