SS – 415

V Semester B.Sc. Examination, Nov./Dec. 2018
(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) Expression vector.
2) Recombinant vaccines.
3) Fungal Biofertilizer.
4) PUC 19.
5) Sludge treatment.

SECTION – B

II. Answer **any four** of the following : **(4×5=20)**

6) Explain in brief the components used in PCR.
7) Discuss the self priming method in the construction of cDNA.
8) Describe the process of production of Biogas.
9) Explain cosmid vector in gene cloning.
10) Write a note on the process of biodegradation of petroleum products.

SECTION – C

III. Answer **any three** of the following : **(3×10=30)**

11) What is blotting ? Write the procedure and applications of western blotting technique.
12) Describe the method of microbial conversion of sugar to alcohol and add a note on gasohol.

P.T.O.

13) Explain colony hybridization method in screening and selection of recombinant cells.

14) What are the different methods of bioleaching ? Explain the process of bioleaching of copper and gold.

15) What are Restriction enzymes ? Give the types and mechanism of their action with examples.

SECTION – D

IV. Answer the following : **(10×1=10)**

16) Antibiotic resistant genes.

17) Symbiosis.

18) Cos site.

19) HRP enzyme.

20) Adaptors.

21) Klenow fragment.

22) Renewable resources.

23) Symbiotic N_2 fixation.

24) DNA ligase.

25) Recombinant hosts.

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BIOTECHNOLOGY – VI
Immunology and Animal Biotechnology

Time : 3 Hours Max. Marks : 70

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

SECTION – A

I. Write short notes on the following **(5×2=10)**

1) Tissue extract
2) ELISA
3) HeLa cell lines
4) B-lymphocytes
5) Inflammation.

SECTION – B

II. Answer **any four** of the following : **(4×5=20)**

6) Differentiate between Humoral and cell mediated immunity.
7) Explain Electroporation method of gene transfer.
8) Describe the type III hypersensitive reaction with an example.
9) Write a note on Active and Passive immunisation.
10) Give an account on Mechanical method of Tissue Disaggregation.

SECTION – C

III. Answer **any three** of the following : **(3×10=30)**

11) Describe :
    a) Calcium phosphate mediated transfection.
    b) Primary cell culture.

P.T.O.

12) Define complement system. Explain the components and properties of classical complement system.

13) Give an account on :
   a) Transgenic sheep
   b) Barriers of innate immunity.

14) Explain HAT selection method in screening of hybrid cells.

15) What are antibodies ? Explain the structure and functions of IgM and IgG.

SECTION – D

IV. Answer the following : **(1×10=10)**

16) Define cell strain

17) Transgenic mice

18) Adjuvants

19) Plasma

20) Who discovered blood grouping in humans ?

21) Fibronectin

22) Opsonization

23) Expand HGPRT

24) Attenuation

25) Raft method.