(BIT10111)

M.Sc. DEGREE EXAMINATIONS, DECEMBER 2019.

First Semester

Biotechnology

Paper I — GENETICS AND CELL BIOLOGY

(Regulation 2011)

Time : Three hours Maximum : 70 marks

Answer ONE question from each unit.

All questions carry equal marks.

UNIT I

1. Describe sex chromosomes and sex determination.

Or

2. Write notes on

(a) Modern concept of gene

(b) Establishment of Recon

UNIT II

3. Describe genetic recombination in Bacteria.

Or

4. Write notes on

(a) Role of rec proteins

(b) Mapping of Bacterial chromosome

UNIT III

5. Describe the differences between prokaryotic and eukaryotic cells.

Or

6. Write notes on

(a) Golgi apparatus

(b) Lysozymes

UNIT IV

7. Write an account on the organisation of eukaryotic chromosomes.

Or

8. Write notes on

(a) Apoptosis

(b) Cell cycle

UNIT V

9. Describe cell surface receptors and their functions.

Or

10. Write notes on

(a) Intracellular signalling proteins

(b) Adhesion junctions

(BIT10211)

M.Sc. DEGREE EXAMINATIONS, DECEMBER 2019.

First Semester

Biotechnology

Paper II — BIOMOLECULES

(Regulation 2011)

Time : Three hours Maximum : 70 marks

Answer ONE question from each unit.

All questions carry equal marks.

UNIT I

1. Describe the reactions of monosaccharides.

Or

2. Write notes on

(a) Amino sugars

(b) Oligosaccharides.

UNIT II

3. Describe the structure and properties of amino acids.

Or

4. Write notes on

(a) Site directed mutagenesis

(b) Non Ribosomal peptide synthesis.

UNIT III

5. Describe the biological functions of Proteins.

Or

6. Write notes on

(a) Primary structure of proteins

(b) Ramachandran plot.

UNIT IV

7. Describe the physical and chemical properties of fatty acids.

Or

8. Write notes on

(a) Sphingolipids

(b) Prostaglandins.

UNIT V

9. Describe the structure of purines and their significance.

Or

10. Write notes on

(a) Denaturation

(b) Kinetics of reassociation.

(BIT10311)

M.Sc. DEGREE EXAMINATIONS, DECEMBER 2019.

First Semester

Biotechnology

Paper III– TOOLS AND TECHNIQUES IN BIOLOGY

(Regulation 2011)

Time : Three hours Maximum : 70 marks

Answer ONE question from each unit.

All questions carry equal marks.

UNIT I

1. Describe the methods of cell disruption.

Or

2. Write an account on the types of centrifuges and their applications.

UNIT II

3. Describe the principle, methodology and applications of Gas liquid chromatography.

Or

4. Explain the principle, methodology and applications of HPLC.

UNIT III

5. Describe the methods of separation and determination of molecular size of DNA.

Or

6. Explain the principle, methodology and application in separation of large DNA particle

UNIT IV

7. Describe the principle and applications of NMR spectrophotometry.

Or

8. Write an account on X-ray diffraction and X-ray crystallography

UNIT V

9. Write an account on nature and types of radioactivity.

Or

10. Describe the biological uses of radioisotopes

(BIT10411)

M.Sc. DEGREE EXAMINATIONS, DECEMBER 2019.

First Semester

Biotechnology

Paper IV – ENZYMOLOGY

(Regulation 2011)

Time : Three hours Maximum : 70 marks

Answer ONE question from each Unit.

ALL questions carry equal Marks.

UNIT I

1. Write an account on the classification of Enzymes.

Or

2. Write notes on

(a) Collision theory

(b) Fishcher Koshland models

UNIT II

3. Describe the transformation of Michaelis Menten equation and its significance.

Or

4. Write notes on

(a) Determination of Vmax

(b) Kinetics of single substrate enzyme

UNIT III

5. Describe the reversible inhibitors of enzymes.

Or

6. Write notes on

(a) Purification of enzymes

(b) Explain couple kinetic assay

UNIT IV

7. Describe the enzyme modifications by chemical procedures affecting amino acid chain.

Or

8. Write notes on

(a) Chymotrypsin

(b) Covalent catalysis

UNIT V

9. Describe the structure and functions of Vitamin coenzymes.

Or

10. Write notes on

(a) Allosteric kinetics

(b) Applications of immobilized enzyme

(BIT10511)

M.Sc. DEGREE EXAMINATIONS, DECEMBER 2019.

First Semester

Biotechnology

Paper V — GENERAL MICROBIOLOGY

(Regulation 2011)

Time : Three hours Maximum : 70 marks

Answer ONE question from each Unit.

ALL questions carry equal marks.

UNIT I

1. Describe the cell structure of prokaryotic ornanisms.

Or

2. Describe the characters of Algae and protozoa.

UNIT II

3. Describe the structure and functions of Ribosomes.

Or

4. Write an account on the structure and functions of Flagella, Inclusion bodies and plasmids.

UNIT III

5. Describe the general characters of TMV and HIV.

Or

6. Write notes on

(a) Replication of Viruses

(b) Purification of Viruses

UNIT IV

7. Describe the methods of sterilization and disinfection.

Or

8. Describe the methods of preservation and maintenance of cultures.

UNIT V

9. Write an account on the nutritional group of Bacteria.

Or

10. Describe the factors influencing bacterial growth.