(BIC30112)

M.Sc. DEGREE EXAMINATION, DECEMBER 2019.

Third Semester

Biochemistry

Paper I – GENETICS

(Regulation 2012)

Time : Three hours Maximum : 70 marks

Answer ONE question from each unit.

All questions carry equal marks.

UNIT I

1. (a) Describe the Law of independent assortment and deviations of Mendelian inheritance. (7)

(b) Write an account on sex linked inheritance. (7)

Or

2. (a) Describe the identification of nucleic acid as genetic material. (7)

(b) Describe prokaryotic and Eukaryotic chromosomes. (7)

UNIT II

3. (a) Describe the types of mutations and their significance. (7)

(b) Explain Mutagens and their mechanism of action. (7)

Or

4. (a) Explain site directed mutagenesis. (7)

(b) Write an account on Nested genes. (7)

UNIT III

5. (a) Describe the process of Meiosis and its significance. (7)

(b) Explain cell cycle parameters. (7)

Or

6. (a) Describe the proto oncogenes and oncogenes. (7)

(b) Explain site specific recombination. (7)

UNIT IV

7. (a) Describe the methods of genetic transfers. (7)

(b) Explain specialized transduction. (7)

Or

8. (a) Describe the Homologous recombination. (7)

(b) Write and account on crossing over. (7)

UNIT V

9. (a) Describe the gene linkage and its importance. (7)

(b) Explain multiple crossing over. (7)

Or

10. (a) Describe the complementation analysis. (7)

(b) Explain mapping by transformation. (7)

(BIC30212)

M.Sc. DEGREE EXAMINATIONS, DECEMBER 2019.

Third Semester

Biochemistry

Paper II — IMMUNOLOGY

(Regulation 2012)

Time : Three hours Maximum : 70 marks

Answer ONE question from each unit.

All questions carry equal marks.

UNIT I

1. (a) Describe innate immunity and its importance. (8)

(b) Describe the structure and functions of primary lymphoid organ. (6)

Or

2. (a) Describe the phagocytic cells and their killing mechanisms. (8)

(b) Describe B lymphocytes. (6)

UNIT II

3. (a) Write an account on the structure and functions of immune globulins. (8)

(b) Explain the Antigen presenting cells. (6)

Or

4. (a) Explain the kinetics of primary immune responses. (8)

(b) Write an account on cytokine therapy. (6)

UNIT III

5. (a) Describe the structure of MIC 1 and MIC 11 genes. (8)

(b) Explain the role of MIC antigens in immune responses. (6)

Or

6. (a) Describe the biological consequences of complement activation. (8)

(b) Explain complement fixation test. (6)

UNIT IV

7. (a) Describe the production of monoclonal antibodies. (8)

(b) Explain agglutination and precipitation techniques. (6)

Or

8. (a) Describe the types of Vaccines and their importance. (8)

(b) Explain the routes of immunization. (6)

UNIT V

9. (a) Describe the gene linkage and its importance. (7)

(b) Explain multiple crossing over. (7)

Or

10. (a) Describe the complementation analysis. (7)

(b) Explain mapping by transformation. (7)

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(BIC30312)

M.Sc. DEGREE EXAMINATIONS, DECEMBER 2019.

Third Semester

Biochemistry

GENETIC ENGINEERING

(Regulation 2012)

Time : Three hours Maximum : 70 marks

Answer ONE question from each unit.

All questions carry equal marks.

UNIT I

1. (a) Describe the methods of isolation of gene/ DNA fragments (8)

(b) Describe cDNA synthesis (6)

Or

2. (a) Describe the production of DNA fragments. (8)

(b) Describe RFLP and its significance. (6)

UNIT II

3. (a) Write an account on Taq DNA polymerase. (8)

(b) Explain RAPD and its significance. (6)

Or

4. (a) Explain the solid phase synthesis of oligonucleotides. (8)

(b) Write an account on gene probes in prenatal detection of diseases. (6)

UNIT III

5. (a) Describe the bacterial artificial chromosomes. (8)

(b) Describe Yeast artificial chromosomes (6)

Or

6. (a) Describe the promoters used in expression vectors. (8)

(b) Describe vectors used for cloning in mammalian cells. (6)

UNIT IV

7. (a) Explain the conversion of blunt end DNA fragment in to cohesive ended DNA. (8)

(b) Explain T DNA ligases and their significance. (6)

Or

8. (a) Explain Linkers and adaptors. (8)

(b) Describe liposome mediated DNA delivery. (6)

UNIT V

9. (a) Describe the markers linked to drug and disease resistant genes. (8)

(b) Describe the applications of RFLP in forensic science and pedigree analysis. (6)

Or

10. (a) Describe antisense technology and its applications. (8)

(b) Write an account on carbon nano tubes. (6)

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(BIC30412)

M.Sc. DEGREE EXAMINATIONS, DECEMBER 2019.

Third Semester

Biochemistry

Paper IV–CLINICAL BIOCHEMISTRY

(Regulation 2012)

Time : Three hours Maximum : 70 marks

Answer ONE question from each Unit.

ALL question carry equal Marks.

UNIT I

1. (a) Describe the hazards in clinical biochemistry laboratory and remedies. (8)

(b) Describe the automation in clinical laboratory. (6)

Or

2. (a) Describe the non-protein nitrogenous compounds in blood and urine. (8)

(b) Explain Lesh Nyhan syndrome and its symptoms (6)

UNIT II

3. (a) Describe Hepatic and erythropoletic porphyrias. (8)

(b) Write an account on Hyperchlorohydria. (6)

Or

4. (a) Write an account on Sickle cell anemia. (8)

(b) Describe disaccharide deficiency its symptoms and remedies. (6)

UNIT III

5. (a) Describe the various Liver function tests. (8)

(b) Describe serum enzymes in Liver disease. (6)

Or

6. (a) Write an account on jaundice classification and differential diagnosis. (8)

(b) Write an account on Nephritis and Nephritic syndrome. (6)

UNIT IV

7. (a) Describe the plasma enzymes and in diagnosis and prognosis. (8)

(b) Explain the clinical applications of plasma enzymes in myocardial infection and liver disease (6)

Or

8. (a) Describe the plasma lipids and their functions. (8)

(b) Write an account on Lipoproteinemias. (6)

UNIT V

9. (a) Write an account on Diabetes mellitus. (8)

(b) Describe antherosclerosis and Neuropathy. (6)

Or

10. (a) Write an account on Hypoglycemia in children. (8)

(b) Write an account on galactosemia. (6)