28/11/17

Exam. Code : 206601

Subject Code : 5120

M.Sc. Bio-Informatics I[st] Semester

BASIC CONCEPT IN BIOLOGY

Paper—BI : 511

Time Allowed—3 Hours] [Maximum Marks—75

Note :— Section A is compulsory, each question carries **1½** marks. Attempt **four** questions from Section B, selecting **one** from each unit. Each question carries **12** marks.

SECTION—A

Write short answers for the following :

I. Postulates of cell theory.

II. Cell mediated immunity.

III. Allosteric modification of enzymes.

IV. Antibody diversity.

V. Nucleosome.

VI. Fluid mosaic nature of plasma membrane.

VII. Stem cells.

VIII. Allosteric inhibition of enzyme.

IX. MHC.

X. GERL complex. 1½×10=15

SECTION—B

UNIT–I

1. (a) Highlight the differences between a prokaryotic and eukaryotic cell with the help of diagrams.

   (b) What are the differences in cilia and flagella ?

   6×2=12

2. What is the role of mitochondria and chloroplast in the energy transactions ? 12

UNIT–II

3. Write notes on :

   (a) Gluconeogenesis

   (b) Oxidative phosphorylation. 6×2=12

4. Describe structural organization of proteins. 12

UNIT–III

5. (a) Explain Michaelis-Menten equation.

   (b) Differentiate between covalent catalysis and acid-base catalysis. 6×2=12

6. (a) Write a note on the factors affecting enzyme activity.

   (b) What do you understand by enzyme specificity ?

   6×2=12

UNIT–IV

7. Write notes on :

   (a) Antigen processing and presentations.

   (b) MHC polymorphism. 6×2=12

8. Describe structure and function of immunoglobulins. 12

UNIT–V

9. Describe maturation and differentiation of T & B cells. 12

10. Write a note on ELISA. 12