 B.Sc.-CBCS/IS/BIOTH/H/C1T/17

2017

BIOTECHNOLOGY

[Honours]

(CBCS)

[First Semester]

PAPER – C1T

Full Marks : 40

Time : 2 hours

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

GROUP – A

1. Answer any *five* questions from the following : 2 × 5

(*a*) What do you understand by enzyme specificity ? 2

(*b*) What is isolectric point of an amino acid ? 2

(*c*) Write the pharmaceutical importance of carbohydrate with example. 2

(*d*) What do you mean by oligomeric enzymes ? 2

(*e*) Distinguish between B and Z DNA. 1 + 1

(*f*) What is the fate of pyruvate in aerobic conditions ? 2

(*g*) What is cardiolipin ? 2

(*h*) What are essential fatty acids ? Give examples. 1 + 1

GROUP – B

2. Answer any *four* questions from the following : 5 × 4

(*a*) Discuss briefly about the forces stabilizing protein structure. Define transamidation with example. 3 + 2

(*b*) Define mucopolysaccharides. What are the body organs containing mucopolysaccharides with spoecific examples ? 2 + 3

(*Continued*)

(*c*) Distinguish between 'Fats and Waxes' with examples. What do you mean by rancidity and halogenation ? 3 + 2

(*d*) Define (Tm), what are the factors on which Tm depend ? Give examples of chemicals that can cause denaturing of DNA. 1 + 2 + 2

(*e*) Discuss briefly about the importance of Pentose phosphate pathway. What are metallo-enzymes ? 4 + 1

(*f*) State about glycoproteins and phospholipids with their functions. $2\frac{1}{2} + 2\frac{1}{2}$

GROUP – C

3. Answer any *one* question from the following : 10 × 1

(*a*) (*i*) Differentiate between substrate level phosphorylation and oxidative phosphorylation.

(*ii*) State the role of PEP, carboxykinase and fructose 1, 6 bisphosphatase in gluconeogenesis.

(*iii*) State the mode of action of thiolase in β-oxidation of fatty acids. 3 + 4 + 3

(*b*) Discuss the principle of affinity chromatography. What are the factors that affect the electrophoretic mobility (PM) of a protein molecule ? What is immunoblotting ? 4 + 3 + 3
