

2018

CBCS

1st Semester

BIOTECHNOLOGY

PAPER—C1T

(Honours)

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

Biochemistry and Metabolism

1. Answer any five questions :

5 × 2

(a) Mention the importance of pentose phosphate pathway.

(b) What is Q cycle ?

- (c) Briefly state the level of classification of enzymes.
- (d) State the importance of glycolipids.
- (e) Name the different types of RNAs.
- (f) Why lactose/maltose is reducing sugar but sucrose is non-reducing sugar ?
- (g) Why amino acids are called ampholytes ?
- (h) Why glycogenolysis and glycogenesis do not occur simultaneously ?

2. Answer any *four* questions :

4×5

- (a) Mention the differences between A DNA, B DNA and Z DNA. 5
- (b) (i) Why polysaccharides are the storage carbohydrates instead of monosaccharides ?
- (ii) Write a brief note on mucopolysaccharides. 2+3

(c) What are phospholipids? Mention their biological importance. 2+3

(d) (i) Write down the differences between coenzymes and prosthetic groups.

(ii) Describe the role of different vitamins on enzyme activity. 2+3

(e) Describe the steps of β -oxidation by mentioning the respective enzymes. 5

(f) (i) Describe the regulation of TCA cycle.

(ii) State the role of glucose-6-phosphate in carbohydrate metabolism. 3+2

3. Answer any one question : 1×10

(a) (i) Give an account of the stereo-isomerism of monosaccharides with examples.

(ii) Describe the Watson-Crick DNA double helix model. 5+5

- (b) (i) Classify the amino acids on the basis of chemical properties.
- (ii) Describe the forces stabilizing different levels of protein structure.
- (iii) What are conjugated proteins? 3+5+2
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