

3. (a) Describe the structure and function of Lecithin. 4
- (b) Define and classify Lipids giving examples. 4
- (c) What is meant by rancidity of fats ? Discuss. 4

OR

- (p) Describe the structure and function of cholesterol. 4
- (q) Draw the structure of palmitic and stearic acids. 4
- (r) What are simple and mixed triglycerides ? Give examples. 4
4. (a) Name non-proteinous amino acids with their structures. 4
- (b) Draw the structure of peptide bonds. 4
- (c) Give the classification of proteins based On function. 4

OR

- (p) What is meant by the tertiary and quaternary structure of protein ? 4

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First Semester B. Sc. (Part - I) Examination

IS : BIOCHEMISTRY

(Biomolecules and Nutrition)

P. Pages : 6

Time : Three Hours]

[Max. Marks : 80

Note : All questions are compulsory and carry equal marks, except question no. one carrying eight marks.

1. (A) Fill in the blanks :— (½ mark each)
- (i) Mucopolysaccharides are _____.
- (ii) Lecithin contains a nitrogenous base named as _____.
- (iii) All amino acids are optically active Except _____.
- (iv) Vitamin _____ is produced from 7-dehydro cholesterol on exposure of skin to sunlight. 2
- (B) Choose the correct alternative. (½ mark each)
- (i) The most important provitamin A is
- (a) α-carotene

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- (b) β -carotene
 (c) γ -carotene
 (d) All
- (ii) Which amino acid is present in Folic acid ?
 (a) Tryptophan
 (b) Tyrosine
 (c) Glutamine
 (d) Glutamic acid
- (iii) DNA is denatured by
 (a) Heat
 (b) Acid
 (c) Alkali
 (d) All of the above
- (iv) Arachidonic acid contains the number of double bonds
 (a) 2
 (b) 3
 (c) 4
 (d) 5

2

- (C) Answer in one sentence. (1 Marks each)
 (i) Define saponification number.
 (ii) Define RQ.
 (iii) Define Zwitterion.
 (iv) Define asymmetric carbon.

4

2. (a) What are Epimers ? Explain with examples.
 (b) Describe the structure and function of starch.
 (c) Discuss the phenyl hydrazine reaction with suitable example.

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OR

- (p) What is mutarotation ? Explain with example.
 (q) Draw ring structures of glucose and fructose.
 (r) Describe the structure and function of hyaluronic acid.

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4

(q) Draw the structures of sulfur containing amino acids. 4

(r) What do you understand by denaturation and renaturation of proteins ? 4

5. Discuss importance of carbohydrates and protein in Nutrition. 12

OR

Describe importance of I, Fe and Ca in nutrition. 12

6. Describe the structure and functions of different types of RNA. 12

OR

Describe in detail structure and functions of hemoglobin. 12

7. (a) Describe the structure and functions of thyroxine. 4

(b) Describe structure, sources and deficiency effects of Vitamin-B₁. 4

- (c) Give the structures of medullary hormones of adrenal. 4

OR

- (p) Define and classify hormones with examples. 4
- (q) Describe structure and functions of Vitamin D₂ and D₃. 4
- (r) Describe the structure and deficiency effects of ascorbic acid. 4

