

AT - 284

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

1 S : BIOCHEMISTRY

(Biomolecules and Nutrition)

P. Pages : 5

Time : Three Hours]

[Max. Marks : 80

Note : All questions are compulsory and carry equal marks. Question No. **One** carrying **Eight** marks.

1. (A) Fill in the blanks ($\frac{1}{2}$ mark each) :—

(i) _____ is epimer of glucose with respect to Carbon No. 2.

(ii) _____ is sugar found in RNA.

(iii) _____ is a branched component of starch.

(iv) B-Cells of Islets Langerhans secretes _____ hormone. 2

(B) Choose correct alternative ($\frac{1}{2}$ mark each) :—

(i) Components of nucleotide are :

(a) Base sugar

(b) Base sugar phosphates

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P.T.O.

2. Describe structure, occurrence and biological importance of starch and heparin. 12

OR

Discuss with examples optical isomerism, D- and L- isomerism and Mutarotation in Carbohydrates.

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

OR

- (p) Describe the structure and functions of cholesterol. 4
(q) Give structure and function of Sphingo myelin. 4
(r) Describe with examples cis - and trans - isomerism in fatty acids. 4
4. (a) Describe classification of amino acids based on Polarity. 4

- (b) Discuss denaturation and renaturation of proteins. 4
- (c) Describe Forces stabilizing tertiary structure of proteins. 4

OR

- (p) Describe classification of proteins based on functions. 4
 - (q) Describe in brief structure and functions of hemoglobin. 4
 - (r) What are non-proteinous amino acids ? Give their structures. 4
5. (a) Discuss complete and incomplete proteins giving examples. 4
- (b) Discuss biochemical basis of Obesity. 4
 - (c) Describe various factors affecting BMR. 4

OR

- (p) Describe importance of calcium and iodine in nutrition. 4
- (q) Discuss diet during pregnancy. 4
- (r) Describe causes of fatty Liver. 4

6. (a) Differentiate between RNA and DNA. 4
(b) Describe Clover-Leaf structure of t-RNA. 4
(c) Describe Hershey and Chase experiment. 4

OR

- (p) Give biological importance of cytochromes and chlorophyll. 4
(q) Discuss denaturation and annealing of DNA. 4
(r) Draw structures of purine and pyrimidine bases present in DNA. 4
7. Describe structures and sources of fat soluble vitamins.

OR

Describe the structures and functions of hormones of thyroid and Pancreas. 12



