

- (iv) What is the biological importance of Phosphoglycerides? (5,5,3,2)
5. (i) Define the term Epimer with example. Also write down the name and structure of C- 2 and C-3 epimer of glucose.
- (ii) Sucrose does not undergo mutarotation. Explain.
- (iii) Give the name of monosaccharide units obtained on the enzymatic hydrolysis of the following carbohydrate molecules :
- (a) Maltose
- (b) Starch
- (c) Cellulose
- (iv) How will you convert D-glucose to D-fructose? (5,5,3,2)
6. (i) Write all the steps in brief involved in the synthesis of protein in ribosomes.
- (ii) When a freshly prepared solution of D-glucose is allowed to stand, its specific rotation changes. Name the phenomena and explain the whole process.
- (iii) What are liposomes and discuss the biological applications of liposomes. Write one difference between liposomes and lipoprotein. (5,5,5)

(1000)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 7060

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Unique Paper Code : 2173522006

Name of the Paper : DSE: Biomolecules I

Name of the Course : **B.Sc. (Prog.) Life Sciences/
B.Sc. (Prog.) Physical
Sciences / B.Sc. (Prog.)
Industrial Chemistry**

Semester : V/III

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Attempt any **FOUR** questions in all.

1. (i) True or False :

(a) Lactose on hydrolysis by an enzyme gives equimolar mixture of D-glucose and D-galactose.

(b) Glucoside is an acetal form of glucose.

P.T.O.

- (c) Nucleotides are linked together by glycosidic linkage.
- (d) The two strands of DNA are held together by hydrogen bond between the complementary base pairs.
- (e) Lipids are polymers of fatty acids.
- (ii) Fill in the blanks :
- (a) Starch is a natural polymer of _____.
- (b) The phenomena of developing unusual and undesirable odour in lipids is called _____.
- (c) A Nucleotide is composed of one nitrogenous base, one sugar molecule and one _____ group.
- (d) The biological process of protein synthesis using genetic material is called _____.
- (e) In DNA, the number of hydrogen bonds between nitrogen base pair adenine and thymine is _____.
- (iii) α -Glucose is less stable than β -Glucose. Explain.
- (iv) Differentiate between nucleotide and nucleoside.
(5,5,3,2)

2. (i) What do you mean by a genetic code? Explain how genetic codes control the synthesis of protein.
- (ii) Describe the primary structure of DNA. Explain how nucleotides are linked to form a polynucleotide chain.
- (iii) Differentiate between.
- (a) Replication and Transcription
- (b) r-RNA, m-RNA and t-RNA (5,5,5)
3. Write a note on the following (Any three) :
- (i) Kiliani-Fischer synthesis
- (ii) Secondary structure of DNA
- (iii) Classification of lipids
- (iv) Biological importance of nucleic acid
- (v) Polysaccharide (5,5,5)
4. (i) Discuss the structure, properties and functions of triglycerides.
- (ii) What do you mean by saponification of fats? Also describe the significance of saponification value and the formula used to calculate it.
- (iii) What are steroid hormones? Give one example.