

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc., Summer 2017-18 Examination

Semester: 1
Subject Code: 11203104
Subject Name: Biochemistry of Macromolecules

Date: 28/05/2018
Time: 10:30 am to 01:00 pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1. A) Essay type (08)**
(a) Structural organization of proteins.
- Q.1. B) Answer the following questions (Any two)**
- (a) Do as directed (Each of 02 marks) (04)
1. Name two acidic aminoacids.
 2. List methods for sequence determination of proteins.
- (b) General structure of aminoacids (04)
- (c) Describe the criteria of homogeneity of proteins. (04)
- Q.2. A) Answer the following questions.**
- (a) Describe the biological role of the following: (Each of 02 marks) (04)
1. Homosaccharides
 2. Heterosaccharides
- (b) Short note: Biological functions of carbohydrates (04)
- Q.2. B) Answer the following questions (Any two)**
- (a) Multiple choice questions (Each of 01 marks) (03)
1. When the polysaccharides are composed of different types of sugars or their derivatives, they are referred to as _____.
 - a) Heteropolysaccharides
 - b) Glycoproteins
 - c) Conjugated carbons
 - d) All of the above.
2. _____ are a special type of stereoisomers that are mirror images of each other.
- a) Diastereomers
 - b) Enantiomers
 - c) Epimers
 - d) Ketomers
3. _____ is not an example of glycoproteins.
- a) Fibronectin
 - b) Immunoglobulins
 - c) Collagen
 - d) Cellulose
- (b) Short note: Chemical properties of carbohydrates (03)
- (c) Short note: Glycosaminoglycans (03)
- Q.3. A) Essay type (08)**
(a) Classification of Lipids.
- Q.3. B) Answer the following questions (Any two)**
- (a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) (04)
1. List physiochemical properties of fatty acids.
 2. Biological roles of Sphingolipids

(b) Short note: Structure and Function of Prostaglandins (04)

(c) Short note: Chemistry and properties of Steroids (04)

Q.4. A) Answer the following questions.

(a) Fill in the blanks. (Each of 02 marks) (04)

1. The pyrimidine present in DNA but absent in RNA is_____.

2. Ribose and deoxyribose differ in their structure around carbon atom _____.

(b) Short note: Nucleic acid structure. (04)

Q.4. B) Answer the following questions (Any two)

(a) Multiple choice questions. (Each of 01 marks) (03)

1. _____ is not a type of DNA.

a) A

b) B

c) Z

d) Q

2. The backbone of nucleic acid structure is constructed by

a) Peptide bonds

b) Glycosidic bonds

c) Phosphodiester bridges

d) All of them.

3. The number of base pairs present in each turn (pitch) of B-type of DNA

a) 8

b) 10

c) 15

d) 16

(b) Short note on different forms of DNA (03)

(c) Short note: Types of RNA. (03)