

**PARUL UNIVERSITY**  
**COLLEGE OF AGRICULTURE**

**B.Sc. (Hons.) Agriculture Winter 2019-20 Examination**

Semester: 6<sup>th</sup>

Subject Code: 20110351

Subject Name: Biochemistry

Date: 11/12/2019

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 Do as Directed.****A. Fill in the blanks. (Each of 1.00 marks)****(10)**

1. \_\_\_\_\_ are biological catalysts that speed up the rate of the biochemical reaction.
2. Embden-Meyerhof-Parnas pathway is also known as \_\_\_\_\_
3. CPPP stands for \_\_\_\_\_
4. The deficiency of \_\_\_\_\_ and \_\_\_\_\_ causes Scurvy and Rickets disease in child.
5. Optical Activity is a characteristic feature of a compound with \_\_\_\_\_ atom.
6. Glucose + Glucose = \_\_\_\_\_
7. The \_\_\_\_\_ fatty acids contain one or more double bonds.
8. \_\_\_\_\_ type of protein gives only amino acids on hydrolysis.
9. Any organic compound in which the hydroxyl functional group is bound to carbon is known as \_\_\_\_\_.
10. Six carbon containing ketose sugar is \_\_\_\_\_.

**B. Multiple choice questions. (Each of 1.00 mark)****(10)**

1. \_\_\_\_\_ is not the reducing sugar.
 

a) Sucrose	c) Maltose
b) Ribose	d) Glucose
2. Table sugar is \_\_\_\_\_.
 

a) Sucrose	c) Glucose
b) Fructose	d) Lactose
3. How many molecules of fatty acid occur in a lipid (fat) molecule \_\_\_\_\_.
 

a) 1	c) 3
b) 2	d) 4
4. Which one of the following is saturated fatty acid \_\_\_\_\_.
 

a) Stearic acid	c) Lauric acid
b) Palmitic acid	d) All of the above
5. Proteins conjugated with pigment is known as \_\_\_\_\_.
 

a) Chromoproteins	c) Nucleoproteins
b) Metalloproteins	d) None of the above
6. \_\_\_\_\_ is Hydrophilic in nature.
 

a) Hemoglobin	c) Albumin
b) Myoglobin	d) Globulin
7. Which of the following is Acidic amino acids \_\_\_\_\_.
 

a) Glutamic acid	c) Lysine
b) Aspartic acid	d) Both (a) and (b)
8. Which of the following is ketogenic amino acids \_\_\_\_\_.
 

a) Lysine	c) Tryptophan
b) Tyrosine	d) None of the above
9. Lipids are \_\_\_\_\_.
 

a) Insoluble in water	c) Readily soluble in organic solvent
b) Important constituents of biological membrane	d) All of the above
10. Which of the following is sweetest sugar \_\_\_\_\_.
 

a) Sucrose	c) Glucose
b) Fructose	d) Lactose

**Q.2 Do as Directed.**

**A. Define the following terms. (Any five)**

**(05)**

- 1) Polysaccharide
- 2) Asymmetric carbon
- 3) Semi essential amino acids
- 4) Glucogenic amino acids
- 5) Allosteric enzymes
- 6) Sphingoglycolipids

**B. Answer the following. (Any five)**

**(05)**

- 1) Write down importance of lipids.
- 2) Enlist objectives of Biochemistry
- 3) Differentiate between reducing sugars and non-reducing sugars
- 4) Explain structural organization of proteins.
- 5) Briefly explain the structure of fatty acids
- 6) Write down the functions of the protein.

**Q.3 Write short notes on the following. (Any five)**

**(15)**

- 1) Waxes.
- 2) Metabolism
- 3) Stereochemistry of carbohydrates
- 4) Principle, reagents and procedure of Molisch test.
- 5) Characteristics of enzymes.
- 6) Amylose and amylopectins.

**Q.4 Attempt any three long Questions with examples**

**(15)**

- 1) Describe the enzymes in detail.
- 2) Give classification of Lipids with examples
- 3) Enlist the chemicals used in DNA isolation with their functions and write down the protocol for DNA isolation plant tissues.
- 4) Explain the reaction of glycolysis