

Bago University
Department of Botany
Second Semester Examination, September, 2019

Third Year (B.Sc.)
Botany Specialization
Answer All Questions

Bot.3111
Biochemistry I
Time allowed: (3) Hours

I. Determine whether each statement is TRUE or FALSE.

(10 marks)

1. Biochemistry governs all living organisms and living processes.
2. Carbohydrates are widely distributed in plants and animals nucleus.
3. Glucose, one of the most important carbohydrates, is an example of a disaccharides.
4. The formula of unmodified disaccharides is $C_{12}H_{22}O_{11}$.
5. Glycogen is an plants use it as a form of energy storage.
6. ATP is mainly derived through respiration utilizing the energy derived from the sun.
7. The respiratory breakdown of glucose in the presence of oxygen is an oxidative process.
8. Lipids occur in plants and animals as storage and structural components.
9. Triacylglycerols are the simplest lipids constructed from fatty acids and alcohol.
10. Waxes are the chief storage form of metabolic fuel in marine. .

II. Write correct word to complete the following sentences.

(10 marks)

1. Cholesterol is the most abundant ----- in animals.
2. Human body is unable to synthesis all ----- found in the body.
3. Fats are colourless, odourless and has ----- taste.
4. Amino acids are the building blocks of -----.
5. The hydrocarbon R groups are non – polar and -----.
6. Quaternary structure may influence the activity of -----.
7. The protein content in root, tubers and fruits is between ----- percent.
8. The nucleic acids are very ----- molecules that have two main parts.
9. A nucleotides consists of a nucleoside and one ----- group.
10. Enzyme catalyzing hydrolysis of ester, peptide or ----- bonds.

III. Answer all questions.

(10 marks)

1. Clarify the complex lipids.
2. What is halogenations?
3. Mention the monoamino - monocarboxylic amino acids.
4. Briefly outline the lyases.
5. List the factor affecting enzymatic reaction.

IV. Answer all questions.

(20 marks)

1. Give an account on chemical characteristics of carbohydrates.
2. Explain the essential fatty acids.
3. Briefly explain the quaternary structure of protein.
4. Mention about the chaeacteristics of enzymes.

V. Answer any three questions.

(30 marks)

1. Explain Glycolysis helping diagram.
2. Give detail account on physical properties of fats.
3. Give a complete account on the sources of proteins.
4. Explain the nucleobases with relevant diagram.
5. Explain the cofactors with related word diagram..