

The Assam Royal Global University, Guwahati

Royal School of Biosciences

B.Sc. Biochemistry 1st Semester

Semester End Examination, February 2022

Course Title: Metabolism of Carbohydrates and Lipids

Course Code: BCH152C103

Time: 3 Hours

Maximum Marks: 70

Note: Attempt all questions as per instructions given.

The figures in the right-hand margin indicate marks.

Section – A

1. Attempt **all** questions. (Maximum word limit 50) 2 x 8
- What are the different molecules that regulate glycolysis pathway?
 - Write the names of enzymes of glycogenolysis pathway.
 - Write the name of any two light-regulated enzymes of the calvin cycle.
 - Why TCA cycle is an important central pathway?
 - What are ketone bodies?
 - What are saturated and unsaturated fatty acids?
 - What are eicosanoids?
 - What is plasmalogen?

Section – B

2. Answer **any two** of the following questions: 6 x 2
- Briefly discuss only the irreversible pathways of gluconeogenesis.
 - Explain the oxidative phase of pentose phosphate pathway.
 - Briefly explain the glycogenesis pathway.
3. Answer **any two** of the following questions: 7 x 2
- Explain the CAM pathway.
 - Discuss the ferredoxin-thioredoxin system in relation to the calvin cycle.
 - Diagrammatically explain the glycolate pathway.
4. Answer **any two** of the following questions: 7 x 2
- Discuss about the various types of lipid molecules.
 - Explain the β -oxidation pathway of saturated fatty acids.
 - Explain the metabolism of odd chain fatty acids.
5. Answer **any two** of the following questions: 7 x 2
- Explain the biosynthesis of leukotrienes.
 - Explain the regulation of cholesterol biosynthesis.
 - Discuss the process of prostaglandin biosynthesis.