

Term End External Examination 4th Semester (Session-July 2024)Subject: Clinical Biochemistry

Course No and Title CBCC3422M/ Clinical Significance of Biomolecules-1

Time: 2.15 hours Max Marks:100 Min. Marks:40Section A: Objective Type Questions

Q1. Choose the appropriate Answer:

(8x1.5=12)

- i. Which of the following best describes sucrose?

A Reducing sugar	B Glycoprotein
C Non-reducing disaccharide	D Non-reducing polysaccharide
- ii. Which of the following is commonly referred as table sugar?

A Glucose	B Fructose
C Lactose	D Sucrose
- iii. Which of the following is also known as the Krebs cycle?

A TCA Cycle	B HMP-Shunt
C Glycolytic pathway	D Anabolic pathway
- iv. What is the primary cause of lactose intolerance?

A Absence of Lactose	B Lactase deficiency
C Inappropriate food habits	D Low blood Glucose Level
- v. What does the iodine number measure?

A Goiter	B Fatty acids unsaturation
C Impurity of Proteins	D Salt iodination
- vi. What is the end product of fatty acid degradation?

A Acetyl CoA	B Lactic acid
C Ammonia	D Urea
- vii. How many fatty acids are esterified to glycerol in the structure of triacylglycerol?

A 2	B 3
C 1	D 0

viii. What is the primary function of lipoproteins?

- | | |
|---------------------------------|---------------------|
| A Reverse cholesterol transport | B Protein Synthesis |
| C Lipid transport | D Both A and C |

SECTION-B: DESCRIPTIVE TYPE QUESTIONS (Short Type)

Q2: Answer all the Questions

(8 x 4 =32)

- i. What are epimers? Illustrate with the help of example.
- ii. What is glycosidic bond, and how is it formed?
- iii. What are ketone bodies, and what are some examples of ketone bodies produced in the human body?
- iv. Define lipoproteins. Give their types and functions?
- v. Define disaccharide and polysaccharide, and provide an example of each type of carbohydrate.
- vi. What are glycogen storage diseases and cite a few examples of these metabolic disorders.
- vii. Define fatty acids and provide examples of a few fatty acids commonly found in biological systems?
- viii. What are prostaglandins?

SECTION – C: DESCRIPTIVE TYPE QUESTIONS (Medium Type)

Answer all the questions:

(4 x 7=28)

Q 3. What is mutarotation, and provide an example to illustrate this phenomenon?

OR

What is the difference between reducing and non-reducing sugars?

Q 4. What is glycolysis, and what are the various steps involved in this metabolic process?

OR

What is the importance of the Pentose Phosphate Pathway in our body?

Q 5. What are the fatty acids? How are they classified.

OR

What are glycolipids and phospholipids?

Q6. Why HDL is considered "good" cholesterol and LDL considered "bad" cholesterol?

OR

What are lipid storage diseases, and what are some examples of these genetic disorders?

SECTION – D: DESCRIPTIVE TYPE QUESTIONS (Long Type)

Answer any two of the following: (2 x 14=28)

Q 7. What are carbohydrates, and how are they classified?

Q 8. What is the Krebs cycle and what are its main steps? Calculate its total energy yield.

Q 9. What is β -oxidation of fatty acids and what are the key steps involved in this process?

Q 10. What are the iodine number and saponification number, and how do they help in characterizing fats and oils?