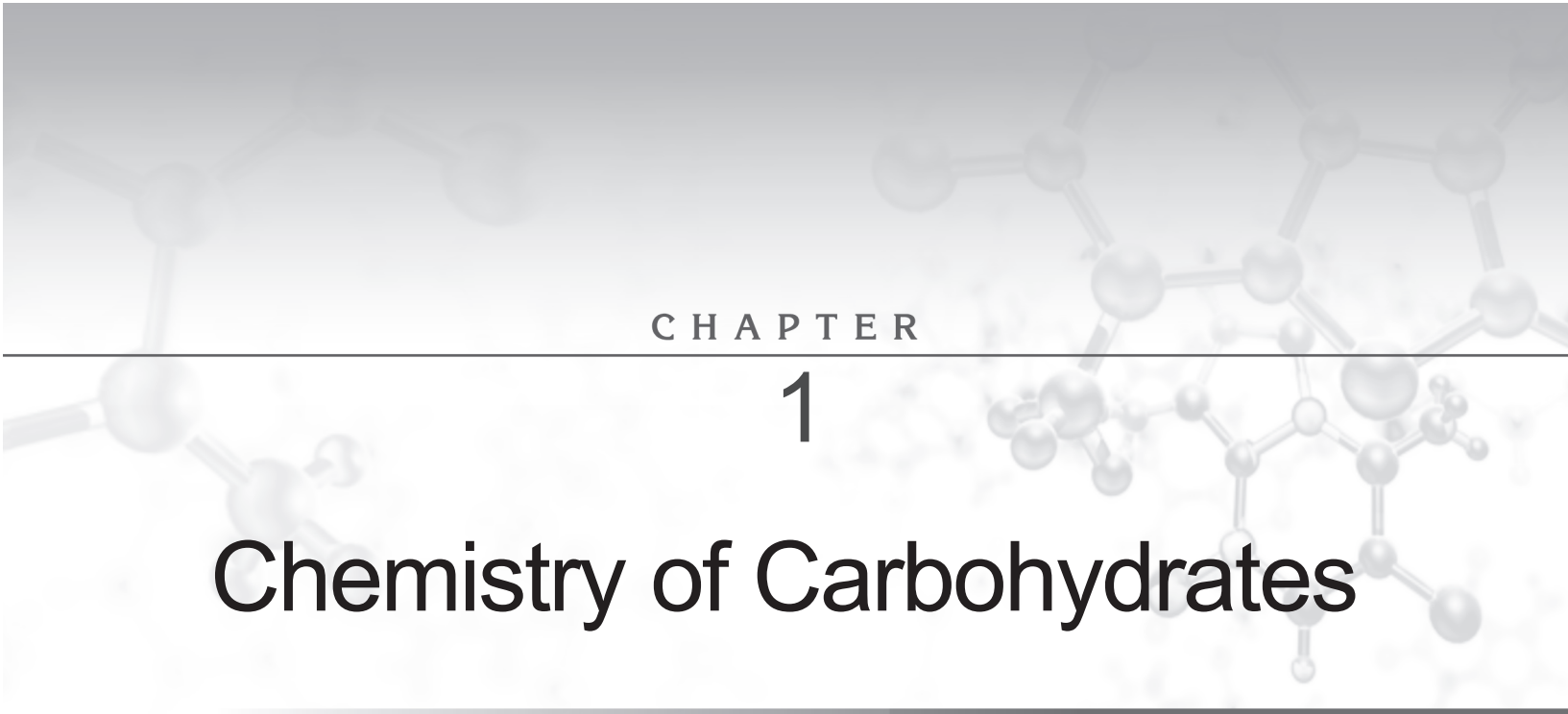




## CHAPTER

# 1

# Chemistry of Carbohydrates

### ECE 1.1: LACTOSE INTOLERANCE

Date: \_\_\_\_\_

A 40-year-old man had a history of severe abdominal distension with cramps and diarrhea after consuming milk and milk products. The urine analysis revealed the presence of reducing sugars. The diagnosis was confirmed by osazone test.

1. What is your diagnosis?
2. What is the underlying enzyme defect?
3. Define reducing sugar. Enumerate all the reducing sugars.
4. Explain the biochemical basis of this disorder.
5. Discuss the types of the disorder.
6. Name the other tests that can be done for the confirmation of above diagnosis.
7. What is the shape of the osazone crystals in this condition?
8. How can it be treated?

## ANSWERS TO ECE 1.1

[illegible]

Teacher(s) Incharge Sign/Date: \_\_\_\_\_

## ANSWERS TO ECE 1.1

[illegible]

Teacher(s) Incharge Sign/Date: \_\_\_\_\_

**ECE 1.2: ROLE OF CARDIAC GLYCOSIDES**

Date:\_\_\_\_\_

A 52-year-old female suffered from congestive heart failure and was started with a loading dose of digitalis. She showed improvement in the symptoms and was discharged after few days. She was prescribed a maintenance dose of digitalis.

1. What is the chemical nature of digitalis?
2. Describe the structure of a glycoside.
3. Write the mechanism of action of digitalis.
4. Name other glycosides along with their biomedical significance.

## ANSWERS TO ECE 1.2

[illegible]

Teacher(s) Incharge Sign/Date: \_\_\_\_\_

## ANSWERS TO ECE 1.2

[illegible]

Teacher(s) Incharge Sign/Date: \_\_\_\_\_

**ECE 1.3: CLINICAL SIGNIFICANCE OF HEPARIN**

Date:\_\_\_\_\_

A 62-year-old woman was hospitalized with deep vein thrombosis (DVT) in her left leg as a complication of abdominal surgery. She was being treated with bedrest and heparin to prevent the clot from further enlarging.

1. What is the chemical nature of heparin?
2. What is the mechanism of action of heparin?
3. Name some other physiologically important glycosaminoglycans (GAGs) along with their composition and functions.

## ANSWERS TO ECE 1.3

[illegible]

Teacher(s) Incharge Sign/Date: \_\_\_\_\_



## ANSWERS TO ECE 1.3

[illegible]

Teacher(s) Incharge Sign/Date: \_\_\_\_\_