

# CBCS SCHEME

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18BT46

**Fourth Semester B.E. Degree Examination, Dec.2023/Jan.2024**

## **Clinical Biochemistry**

Time: 3 hrs.

Max. Marks: 100

**Note: Answer any FIVE full questions, choosing ONE full question from each module.**

### Module-1

- 1 a. What is Oxidative phosphorylation? Briefly explain the process of electron flow through electron transport chain. (10 Marks)
- b. Illustrate the gluconogenetic pathway highlighting the irreversible reactions. Add a note on its regulation. (10 Marks)

**OR**

- 2 a. What is  $\beta$  – oxidation? With a schematic diagram, explain  $\beta$  – oxidation. How many acetyl COA molecules are produced when palmitate undergoes  $\beta$  - oxidation. (10 Marks)
- b. Write short notes on :
  - i) Starch biosynthesis
  - ii) Cholesterol structure. (10 Marks)

### Module-2

- 3 a. Give an account of the various types of diabetes mellitus highlighting their pathophysiology and symptoms. (10 Marks)
- b. Critically evaluate the measurement of glycated haemoglobin. Add a note on its significance. (10 Marks)

**OR**

- 4 a. Discuss the pathophysiology and symptoms of multiple sclerosis. Add a note on how it is different from Sphingolipidoses. (10 Marks)
- b. Write short notes on :
  - i) Apolipoproteins
  - ii) Ketone bodies importance. (10 Marks)

### Module-3

- 5 a. Discuss the biosynthesis of lysine with a schematic diagram. (10 Marks)
- b. Explain the role of Transamination and Deamination in the Catabolism of essential amino acids. (10 Marks)

**OR**

- 6 a. Briefly outline the salient features of urea cycle, with the metabolic reactions involved. (10 Marks)
- b. Discuss the metabolism and purine nucleotides. (10 Marks)

### Module-4

- 7 a. Give an account on the molecular basis and Pathophysiology of Tyrosinemia. (10 Marks)
- b. Discuss any two disorders of purine metabolism. (10 Marks)

**OR**

- 8 a. Explain in detail the hormones secreted by anterior and posterior pituitary glands. (10 Marks)
- b. Briefly discuss the disturbances in thyroid functions. (10 Marks)

**Module-5**

- 9 a. Give an account on the tests conducted to investigate the Glomerular function. (10 Marks)  
b. Explain the role of Creatine Kinase and lactate dehydrogenase in myocardial infarction. (10 Marks)

**OR**

- 10 a. Discuss the various liver function tests and their clinical importance. (10 Marks)  
b. Give an account of the enzymes of pancreatic origin. (10 Marks)

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