

## Fourth Semester B.E. Degree Examination, Feb./Mar. 2022

### 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. Compare glycolysis and PPP pathway indicating the energy balance in each. (10 Marks)  
b. Write short notes on : i) Anaplerotic reactions with examples ii) Amphibolic pathway. (10 Marks)

OR

- 2 a. "Glyoxylate cycle is often referred to as an anabolic variant of the TCA. Is this statement justified? Whether Yes/No give reasons. (10 Marks)  
b. "Glycolysis and gluconeogenesis are effectively two sides of the same coin". Explain what is meant by this statement by describing the reactions of each pathway. (10 Marks)

#### Module-2

- 3 a. Distinguish between Type I, Type II and Type III galactosemia. (10 Marks)  
b. Distinguish between Grades, grade 2 and grade 3 hypoglycemia. (10 Marks)

OR

- 4 a. Explain the various diagnostic tests for HDL and LDL cholesterol. (10 Marks)  
b. Distinguish between Oral and Intravenous glucose tolerance tests. (10 Marks)

#### Module-3

- 5 a. How does the salvage pathway differ from De-novo pathways in nucleotide biosynthesis? (10 Marks)  
b. Explain Transamination and Deamination reactions with examples. (10 Marks)

OR

- 6 a. Give an account of the biosynthesis of lysine and phenylalanine. (10 Marks)  
b. The most important step in urea cycle is the synthesis of fumarate. Do you agree? Whether Yes/No substantiate. (10 Marks)

#### Module-4

- 7 a. Distinguish between Phenylketonuria and alkaptonuria with respect to genetic basic and chemical manifestation emphasizing possible therapeutic approaches. (10 Marks)  
b. Give an account of the Hormones secreted by the Anterior and Posterior pituitary glands in details. (10 Marks)

OR

- 8 a. What do you understand by thyroid hormones? Distinguish between hyper and hypothyroidism with respect to mode of action and effects. (10 Marks)  
b. Distinguish between hyperuricemia and Lesch- Nyhan syndrome. (10 Marks)

#### Module-5

- 9 a. Distinguish between the different phases of pancreatic secretion. Add a note on Bicarbonate Ion production and transport physiology in pancreas. (10 Marks)  
b. Bilirubin is generated by a 2-stage sequential catalytic degradation reaction. Justify the statement. (10 Marks)

OR

- 10 a. Distinguish between ACT and AST. What does it indicate of the enzyme activity of these enzymes are high?? (10 Marks)  
b. Proteins and enzymes have been invaluable in diagnosis of acute coronary syndromes and ischaemia. Do you agree? Whether Yes/No justify giving reasons. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.