2025

(NEP—2020)

(5th Semester)

BIOCHEMISTRY (MAJOR2)

(Clinical Biochemistry)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(SECTION : A—OBJECTIVE)

(*Marks* : 10)

Tick (✓) the correct answer in the brackets provided : 1×10=10

1. Exposure to infectious samples during laboratory experiments is classified as

(a) physical hazard ( ) *(b)* chemical hazard ( )

(c) biological hazard ( ) *(d)* None of the above ( )

2. The anticoagulant that inhibits the conversion of prothrombin to thrombin is

(a) heparin ( ) *(b)* EDTA ( )

(c) calcium ( ) *(d)* sodium fluoride ( )

3. The renal threshold for glucose is

(a) 135–150 mg/dl ( ) *(b)* 145–160 mg/dl ( )

(c) 160–180 mg/dl ( ) *(d)* 165–190 mg/dl ( )

4. Which of the following is a plasma functional enzyme?

(a) Lipase ( ) *(b)* Amylase ( )

(c) Cholinesterase ( ) *(d)* Transaminase ( )

5. Which of the following enzymes is not typically used as a marker for liver damage?

(a) Alanine transaminase (ALT) ( )

(b) Aspartate transaminase (AST) ( )

(c) Alkaline phosphatase (ALP) ( )

(d) Creatine kinase (CK) ( )

6. A patient suspected with acute pancreatitis would likely have elevated the levels of

(a) amylase ( ) *(b)* lipase ( )

(c) lactate dehydrogenase ( ) *(d)* None of the above ( )

7. The molecule which transports unconjugated bilirubin to the liver is

(a) globulin ( ) *(b)* albumin ( )

(c) AST ( ) *(d)* ALP ( )

8. The standard urea clearance is calculated when the volume of urine output is less than

(a) 1 ml/min ( ) *(b)* 2 ml/min ( )

(c) 3 ml/min ( ) *(d)* 4 ml/min ( )

9. The normal value of serum triglycerides is

(a) less than 50 mg/dl ( ) *(b)* less than 100 mg/dl ( )

(c) less than 150 mg/dl ( ) *(d)* less than 200 mg/dl ( )

10. Graves' disease is due to

(a) hyperactivity of the adrenal cortex ( )

(b) hypoactivity of the thyroid gland ( )

(c) hyperactivity of the thyroid gland ( )

(d) hypoactivity of the islets of Langerhans ( )

(SECTION : B—SHORT ANSWERS)

(*Marks* : 25)

Write on *five* of the following, taking at least *one* from each Unit : 5×5=25

UNIT—I

1. Waste disposal in clinical laboratory

2. Preservation of blood samples

UNIT—II

3. Significance of SGOT/SGPT ratio

4. Clinical importance of acid phosphatase

UNIT—III

5. Creatinine clearance test

6. Prothrombin time

UNIT—IV

7. Total cholesterol

8. TRH stimulation test

(SECTION : C—DESCRIPTIVE)

(*Marks* : 40)

Answer *four* questions, taking *one* from each Unit : 10×4=40

UNIT—I

1. Explain in detail any five different types of laboratory accidents and first aids to be given. 5+5=10

2. Write short notes on the following : 5+5=10

(a) Abnormal constituents of urine

(b) Preparation of serum sample

UNIT—II

3. What are isoenzymes? Elaborate on isoenzymes of lactate dehydrogenase and creatine kinase with their diagnostic importances. 2+4+4=10

4. Write brief notes on the following : 5+5=10

(a) Enzyme pattern in myocardial infarction

(b) Diagnostic importance of alanine transaminase and GGT

UNIT—III

5. What do you mean by urea clearance test? Write the procedure, reference value and diagnostic importance of the test. 3+7=10

6. Explain the Van den Bergh reaction and differentiate among the types of jaundice. 5+5=10

UNIT—IV

7. What tests are done to check thyroid function? Explain thyroid scanning in detail. 4+6=10

8. Write brief notes on the following : 5+5=10

(a) Lundh meal test

(b) Serum enzymes in pancreatic function test

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