REV-01
BMLT/53/27/32

2024/11

SET A

BACHELOR OF MEDICAL LABORATORY TECHNOLOGY
THIRD SEMESTER
BIOCHEMISTRY III
BMLT – 303

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. **Full Marks: 70**

(Objective)

Time: 30 min. **Marks: 20**

Choose the correct answer from the following: ***1×20=20***

1. Formation of glycogen is known as
   a. Glycolysis. b. Gluconeogenesis
   c. Glycogenolysis. d. Glycogenesis

2. Hormone that regulates blood glucose
   a. Insulin b. Epinephrine
   c. Growth hormone d. Adrenaline

3. Other name of Cori cycle
   a. Lactic acid cycle b. Lactate
   c. Gluconeogenesis d. Glycogenesis

4. Which enzyme is a regulatory enzyme for glycolysis
   a. Hexokinase, phosphofructokinase, pyruvate kinase b. Glucokinase, aldolase, enolase
   c. Enolase, pyruvate kinase, hexokinase d. Phosphatase, enolase, hexokinase

5. Other name of glycolysis
   a. Hexose monophosphate shunt b. Embden-Meyerhof-Parnas pathway
   c. Emden Pathway d. Gluconeogenesis from lactate

6. PRPP full form
   a. Phosphoribosyl Pyrophosphate b. Phosphoribosylamine Pyrophosphate
   c. Phosphoribosyl-5- Pyrophosphate d. Phosphoribosyl Phosphate

7. The end product of purine metabolism in humans is
   a. Uric acid b. Urea
   c. Pyruvate d. Pyruvic acid

8. What is the mobile phase in Gas Chromatography?
   a. Solid b. Liquid
   c. Gas d. Fluid

9. Which of the following is not a supporting medium in electrophoresis?
   a. Agarose gel b. Starch gel
   c. Silica gel d. Polyacrylamide Gel

10. What is the mobile phase in HPLC?
    a. Solid
    b. Liquid
    c. Gas
    d. Vapour

11. How many molecules of pyruvate is formed as the product of glycolysis?
    a. 1
    b. 2
    c. 3
    d. 4

12. Which enzyme is responsible for the conversion of citrate to isocitrate?
    a. Citrate synthase
    b. Citrate dehydrogenase
    c. Isocitrate dehydrogenase
    d. Aconitase

13. Under anaerobic condition what is the end product of glycolysis
    a. Pyruvate
    b. Lactate
    c. Aspartate
    d. Glucose

14. Synthesis of ketone bodies is known as
    a. Ketoacidic
    b. Ketogenesis
    c. Ketogenic
    d. Ketoacidosis

15. Three ketone bodies are
    a. Acetone, Acetoacetate, Beta-hydroxybutyrate
    b. Beta-hydroxybutyrate, Acetoacetyl, Acetone
    c. Acetoacetyl, Acetone, Acetoacetate
    d. Acetoacetyl Co A, Acetone, Thiolase

16. Ketosis is often seen in:
    a. Nephritis
    b. Coronary artery disease
    c. Muscle degeneration
    d. Diabetes mellitus

17. The key enzyme in the pathway of cholesterol biosynthesis is:
    a. HMG-CoA synthase
    b. HMG-CoA reductase
    c. HMG-CoA lyase
    d. Mevalonate kinase

18. Function of LDL is the transport of:
    a. Cholesterol from liver to peripheral tissues
    b. Triglycerides from intestine to adipose tissue
    c. Cholesterol from peripheral tissues to liver
    d. Free fatty acids from adipose tissue

19. The key enzyme in fatty acid synthesis is:
    a. Acetyl CoA carboxylase
    b. Enoyl reductase
    c. Beta hydroxy acyl dehydratase
    d. Acetyl transacylasea

20. Ketone bodies in urine are identified by:
    a. Heat and acetic acid test
    b. Rothera's test
    c. Benzidine test
    d. Benedict's test

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Descriptive

Time : 2 hrs. 30 min. **Marks : 50**

[Answer question no.1 & any four (4) from the rest]

1. Describe Lipoproteins in details. **10**

2. Write the steps of glycolysis. Describe its salient features. **5+5=10**

3. Write the steps or cycle of glycogenesis. Describe beta-oxidation of fatty acids. **5+5=10**

4. Define glycogenolysis and write its steps or cycle. Describe Glycogen Storage Disease. **1+4+5 =10**

5. Describe the beta oxidation of Palmitic acid (16C)? How many ATP are generated on complete oxidation of 1 molecule of palmitic acid? **10**

6. Describe the steps of synthesis of cholesterol? Name the biologically important compounds derived from cholesterol? **10**

7. Describe the degradation and disorders of Purine nucleotides. **5+5=10**

8. Define chromatography. Discuss paper chromatography in details.Discuss briefly the principle and application of chromatography. **5+5=10**

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