

**BACHELOR IN MEDICAL LABORATORY TECHNOLOGY  
THIRD SEMESTER  
BIOCHEMISTRY-III  
BMLT-303**

**SET  
B**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

**( Objective )**

Marks: 20

1×20=20

Choose the correct answer from the following:

- The precursor for pentose phosphate pathway is
  - Ribulose 5 Phosphate
  - Glucose
  - Pyruvate aldolase
  - Fructose 6 Phosphate
- Which one of the following has no keto (C=O) group?
  - Acetone
  - $\beta$ -hydroxybutyrate
  - Acetocetate
  - Fructose
- The total number of carbons present in Palmitic acid is
  - 12
  - 16
  - 27
  - 22
- The connecting link between glycolysis and TCA cycle produces
  - Citric acid
  - Acetyl CoA
  - Pyruvate
  - Oxalic acid
- Salvage pathway occurs in
  - Kidney
  - Pancreas
  - Extrahepatic tissues
  - Adrenal glands
- Hormone responsible for gluconeogenesis in liver is:
  - Thyroxine
  - Creatinine
  - Glucagon
  - None of the above
- Following is a tricarboxylic acid
  - Oleic acid
  - Citric acid
  - Both the above
  - None of the above
- Life style disease are :
  - High in Cholesterol
  - Hypertension
  - Both the above
  - None of the above
- Krebs cycle is also known as
  - Citric Acid cycle
  - TCA
  - Both of the above
  - None of the above
- HDL is :
  - Bad
  - Good
  - Only a
  - None of the above

11. Cortisol is produced in
  - a. Pancreas
  - b. Anterior pituitary gland
  - c. Adrenal glands
  - d. Liver
12. The degradation of stored glycogen is called as
  - a. Glycolysis
  - b. Gluconeogenesis
  - c. Glycosuria
  - d. Glycogenolysis
13. Adenylsuccinatesynthetase is inhibited by
  - a. GMP
  - b. IMP
  - c. AMP
  - d. All of the above
14. Lipase is activated by
  - a. apoB<sub>18</sub>
  - b. apoB<sub>100</sub>
  - c. apoC<sub>II</sub>
  - d. apoE
15. The essential lipotropic factor includes
  - a. Choline
  - b. Betaine
  - c. Inositol
  - d. All of the above
16. Fatty acid synthesis occurs in the
  - a. Cytoplasm
  - b. Endoplasmic reticulum
  - c. Mitochondria
  - d. Both (a) and (b)
17. Her's disease is caused by a defect in enzyme
  - a. Glucose-6 phosphatase
  - b. Glycogen Phosphorylase
  - c. Amylo  $\alpha$ -1,6 glucosidase
  - d. Hexokinase
18. The total number of ATP produced in TCA cycle is
  - a. 38
  - b. 36
  - c. 30
  - d. 8
19. Which one of the following is a derivative of cholesterol?
  - a. Cholic acid
  - b. Pregnenolone
  - c. Cholecalciferol
  - d. All of the above
20. In glycolysis, the splitting phase is carried out by the enzyme
  - a. Aldolase
  - b. Enolase
  - c. Phosphofructokinase
  - d. Pyruvate kinase

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**( Descriptive )**

Time : 2 hrs. 30 mins.

Marks : 50

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

1. Explain the process of gluconeogenesis from lactate with a diagram. How the body controls blood sugar? 5+5=10
2. Describe the steps involved in  $\beta$ -oxidation of fatty acids. Explain the steps involved in ketogenesis. 5+5=10
3. Explain in detail the electron transport chain in eukaryotes with a diagram. 10
4. Explain degradation of purine nucleotides. Mention five disorders of purine metabolism with their diagnostic possibilities. 5+5=10
5.
  - i. Explain the regulation of cholesterol. 5+5=10
  - ii. Explain the metabolism of lipoproteins with a labelled diagram of lipoprotein structure.
6. Describe the steps of metabolism of carbohydrate. Name two important functions of carbohydrate and classify them. 10
7. Write the steps of metabolism of protein. Name two important functions of protein and classify them. 10
8. Write the steps of metabolism of lipid. Name different lipid profile. Name two important functions of lipid and classify them. 10

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