



## BRAINWARE UNIVERSITY

Term End Examination 2023-2024

Programme – D.Pharm-2022

Course Name – Biochemistry & Clinical Pathology - Theory

Course Code - ER20-23T

( Year II )

Full Marks : 80

Time : 3:0 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

### Group-A

(Multiple Choice Type Question)

1 x 20=20

1. Choose the correct alternative from the following :

- (i) Choose the correct answer: The fats and oils are respectively rich in
- |                                          |                          |
|------------------------------------------|--------------------------|
| a) Unsaturated fatty acids               | b) Saturated fatty acids |
| c) Saturated and unsaturated fatty acids | d) None of these         |
- (ii) Select the correct answer: Glycosphingolipids are a combination of \_\_\_\_\_
- |                                              |                                      |
|----------------------------------------------|--------------------------------------|
| a) Ceramide with one or more sugar residues. | b) Glycerol with galactose.          |
| c) Sphingosine with galactose.               | d) Sphingosine with phosphoric acid. |
- (iii) Select the correct answer: The importance of phospholipids as constituent of cell membrane is because they possess
- |                |                                    |
|----------------|------------------------------------|
| a) Fatty acids | b) Both polar and non-polar groups |
| c) Glycerol    | d) Phosphoric acid                 |
- (iv) Which one give positive result by benedict reagent?
- |             |                 |
|-------------|-----------------|
| a) Starch   | b) Glucose      |
| c) Fructose | d) Both 2) & 3) |
- (v) How many carbonyl groups are present into glucose?
- |      |      |
|------|------|
| a) 1 | b) 2 |
| c) 3 | d) 4 |
- (vi) What is the full form of TCA Cycle?
- |                               |                           |
|-------------------------------|---------------------------|
| a) Tri carboxylate acid cycle | b) Tetra carboxylic acid  |
| c) Tri carboxylic acid        | d) Tetra carboxylate acid |
- (vii) Select the correct pair.
- |                            |                               |
|----------------------------|-------------------------------|
| a) Glycolysis - Cytoplasm. | b) Glycolysis - Mitochondria. |
| c) TCA Cycle - Cytoplasm.  | d) TCA cycle - Golgi body.    |
- (viii) What is full form of ATP?
- |                              |                              |
|------------------------------|------------------------------|
| a) Adenosine tri phosphate   | b) Adenosine die phosphate   |
| c) Adenosine tetra phosphate | d) Adenosine penta phosphate |

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- (ix) Select the correct one from the following statements.
- a) Molisch reagent contain alpha naphthol.      b) Molisch reagent contain beta naphthol.  
 c) Molisch reagent contain alpha acetic acid.      d) Molisch reagent contain beta acetic acid.
- (x) Identify the correct statement from the following options.
- a) Reducing agent reduce the reducing sugar.      b) Reducing sugar can not reduce the reducing sugar.  
 c) Molisch reagent can identify the alcohol.      d) Non reducing sugar reduce the reducing sugar.
- (xi) Identify the enzyme for fat metabolism process.
- a) Protease      b) Lipase  
 c) Pepsine      d) Tripsine
- (xii) Select the enzyme responsible for removal of hydrogen.
- a) Dehydrogenase      b) Decarboxylase  
 c) Dehydratase      d) All
- (xiii) Identify the place for glycolysis process.
- a) Mitochondria      b) Cytoplasm  
 c) Golgi body      d) Endoplasmic reticulum
- (xiv) Indicate the correct ions for react with carbonyl group in Seliwanoff's reagent.
- a) Carboxylic group      b) Ketonic group  
 c) Aldehyde group      d) Hydroxyl group
- (xv) Select the correct process where protein structure will be unfolded.
- a) Denaturation      b) Renaturation  
 c) Folding      d) Defolding
- (xvi) Choose the correct full form of VLDL.
- a) Very low density lipoprotein      b) Very liquid density lipid  
 c) Very low density lipid      d) None
- (xvii) Explain the cause of ketoacidosis.
- a) Diabetes melitus.      b) Blood become acidic.  
 c) Body can't use blood sugar.      d) Body makes more insulin than it needs.
- (xviii) Identify the enzyme for responsible the acetyl Co-A formation.
- a) Pyruvate dehydrogenase      b) Pyruvate decarboxylase  
 c) Succinate hydrase      d) All of these
- (xix) Write the major sites for fat storage into body.
- a) Adipose tissue      b) Brain  
 c) Liver      d) All
- (xx) Select the hormone that maintain blood glucose level into human body.
- a) Insulin      b) Glucagon  
 c) Somatostatin      d) Both a) and b)

### Group-B

(Short Answer Type Questions)

3 x 10=30

2. Describe the biochemical functions of Vitamin C. (3)
3. Explain the symptoms of disease regarding malnutrition of protein. (3)
4. Describe the functions of: mRNA, tRNA, rRNA. (3)
5. Define the following terms: nitrogenous base, nucleoside, nucleotide, triacylglycerol, rancidity, lipoprotein. (3)
6. Define triglycerides and explain their properties. (3)
7. Illustrate a short note on omega-3-fatty acids and cholesterol. (3)
8. Write down the chemical composition of fehling's solution and molisch reagent. (3)
9. Describe the causes of fatty liver. (3)
10. Explain the properties of phosphorylation process. (3)

11. Explain the significance of electron transport chain (ETC). (3)

OR

Explain the name and properties of glycolysis inhibitor. (3)

**Group-C**

(Long Answer Type Questions)

5 x 6=30

12. Explain the physical and chemical properties of protein. (5)

13. Define erythrocytes and mention their functions. (5)

14. Distinguish between alpha and beta oxidation of fatty acid. (5)

15. Explain the properties of glycolysis process. (5)

16. Explain the various tests involved in the detection of the following in urine: ketone bodies, albumin(protein), bile salts, bile pigments, sugar. (5)

17. Illustrate the beta oxidation of palmitic acid. (5)

OR

Explain the properties of TCA Cycle. (5)

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