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Library
Pharmaceutical Technology
Brainware University
Barasat, Kolkata-700125

BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – D.Pharm-2024

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) What is the example of polysaccharide?

- a) Cellulose
- c) Lactose

- b) Glucose
- d) Fructose

(ii) What is the function of dehydrogenase enzyme?

- a) Removal of hydrogen
- c) Removal of carbon-dioxide

- b) Removal of water
- d) Removal of nitrogen

(iii) Identify the correct answer from the following pairs.

- a) Protein - Pepsin
- c) Carbohydrate - Pepsin

- b) Protein - Amylase
- d) Lipid - Pepsin

(iv) What is the importance of Seliwanoff test?

- a) Determination of aldehyde group.
- c) Determination of carboxylic acid group.

- b) Determination of keto group.
- d) Determination of hydroxyl group.

(v) What is the starting material of TCA cycle?

- a) Pyruvic acid
- c) Oxaloacetic acid

- b) Acetyl CoA
- d) Citric acid

(vi) Where insulin is secreted from our body?

- a) β -cells of the pancreatic islets.
- c) Gamma-cells of the pancreatic islets.

- b) Alpha-cells of the pancreatic islets.
- d) Delta-cells of the pancreatic islets.

(vii) What is the function of the decarboxylase enzyme?

- a) Removal of the O₂
- c) Removal of the C

- b) Removal of the CO₂
- d) Removal of the S

(viii) Select the correct answer: fatty liver can be described as-

- a) Fat deposition in liver.
- c) Cholesterol deposition in liver.

- b) Protein deposition in liver.
- d) None

- (ix) 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. |
- (x) Identify the enzyme for fat metabolism process.
- | | |
|--------------|-------------|
| a) Proteiase | b) Lipase |
| c) Pepsine | d) Tripsine |
- (xi) Identify the correct statement.
- | | |
|---|---|
| a) One enzyme has more than one active site. | b) One active site can bind with different substrate. |
| c) More than one substrate can bind with one active site. | d) All |
- (xii) Identify the enzyme responsible for TCA cycle.
- | | |
|----------------------------|--------------------------|
| a) Succinate dehydrogenase | b) Maleate dehydrogenase |
| c) Isocitrate | d) Oxaloacetate |
- (xiii) Identify the correct ion for responsible the oxidation of glucose.
- | | |
|-------|-------|
| a) Cu | b) Mg |
| c) Mn | d) Co |
- (xiv) Select the reason for occur albinism.
- | | |
|-------------------------------|---------------------------------|
| a) Reduce melanine synthesis. | b) Increases melanine synthesis |
| c) All | d) None |
- (xv) Identify the enzyme for responsible the acetyl Co-A formation.
- | | |
|---------------------------|---------------------------|
| a) Pyruvate dehydrogenase | b) Pyruvate decarboxylase |
| c) Succinate hydrase | d) All of these |
- (xvi) Select the major sites for carbohydrate storage into body.
- | | |
|---------------------|----------|
| a) Adipose tissue | b) Liver |
| c) Musscle and bone | d) None |
- (xvii) Select the simple carbohydrate in the biomolecule.
- | | |
|-------------------|------------|
| a) Glyceraldehyde | b) Glucose |
| c) Ribose | d) Pentose |
- (xviii) Select the proper formula of sucrose.
- | | |
|--|---|
| a) C ₁₂ H ₂₂ O ₁₁ | b) C ₆ H ₁₂ O ₁₁ |
| c) C ₈ H ₂₁ O ₁₁ | d) All |
- (xix) Predict the correct option: Which test is used for detection of bile pigment ?
- | | |
|-------------------------|---------------------------|
| a) clearance test | b) modified Glimen's test |
| c) urea creatinine test | d) urine culture test |
- (xx) Predict the correct option: GGT stands for
- | | |
|--------------------------------|---------------------------------|
| a) Gama glucose transpeptidase | b) Gama glutamyl transpeptidase |
| c) Gama gastro transpeptidase | d) Gama gram transpeptidase |

Group-B

(Short Answer Type Questions)

3 x 10=30

- | | |
|--|-----|
| 2. Explain the properties of phosphorylation process. | (3) |
| 3. Classify vitamins citing suitable examples in each case. | (3) |
| 4. Describe the structure of enzyme. | (3) |
| 5. Classify carbohydrates with example based on their chemical nature. | (3) |

6. Describe the different molecule which are involved in the oxidative phosphorylation process. (3)
7. Difference between glucose and fructose. (3)
8. Describe the symptoms of fatty liver. (3)
9. Describe the treatment of ketoacidosis. (3)
10. Classify the biomolecules with proper example. (3)
11. Focus on the functions of folic acid. (3)

OR

Focus on the functions of vitamin D. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

12. Explain the following terms : deamination, decarboxylation, transamination. (5)
13. What are the functions of the following components: VLDL, LDL, HDL, albumin and chylomicrons? (5)
14. Explain the properties of glycolysis process. (5)
15. Explain the term blood along with its functions and composition. (5)
16. Illustrate the various abnormal constituents of urine mentioning their significance in disease or pathological conditions. (5)
17. Distinguish between alpha and beta oxidation of fatty acid. (5)

OR

Illustrate the TCA cycle of carbohydrate metabolism. (5)
