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Department of Allied Health Sciences  
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Barasat, Kolkata- 700125

## BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – B.Sc.(MLT)-2022/B.Sc.(MLT)-2023/B.Sc.(MLT)-2024/B.Sc.(MLT)-2025

Course Name – Biochemistry and Biophysics

Course Code - BMLTC202

( Semester II )

Full Marks : 60

Time : 2:30 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 15=15

1. Choose the correct alternative from the following :

- (i) Select the dietary triglycerides are transported by \_\_\_\_\_.
  - a) Chylomicrons
  - b) VLDL
  - c) LDL
  - d) HDL
- (ii) Select which of the lipoprotein have scavenging action is- \_\_\_\_\_.
  - a) HDL
  - b) IDL
  - c) VLDL
  - d) LDL
- (iii) Select the aromatic amino acids are all, except \_\_\_\_\_.
  - a) Tryptophan
  - b) Tyrosine
  - c) Arginine
  - d) Histidine
- (iv) Identify which one of the form of protein biologically active in human beings are \_\_\_\_\_.
  - a) D and L form
  - b) L form
  - c) Dforms
  - d) Both 2 & 3
- (v) Select which one don't have antioxidant property from following vitamins \_\_\_\_\_.
  - a) B-carotene
  - b) Vitamin C
  - c) Vitamin E
  - d) Vitamin D
- (vi) Find out which vitamin deficiency gives rise Pellagra disease?
  - a) Tiamine
  - b) Riboflavin
  - c) Cyano-Cobalamin
  - d) Niacin
- (vii) Choose from following the pentose sugar present mainly in the heart muscle is \_\_\_\_\_.
  - a) Lyxose
  - b) Ribose
  - c) Arabinose
  - d) Xylose
- (viii) Predict the name of the molecule from the following has reducing properties?
  - a) Mucic acid
  - b) Glucaric acid

- c) Gluconic acid d) Glucuronic acid
- (ix) Glucose is prepared commercially from the hydrolysis of \_\_\_\_\_ by boiling it with dilute  $\text{H}_2\text{SO}_4$  at 393K under pressure. Choose the correct answer following.
- a) Starch b) Sucrose  
c) 1&2 both d) Dextrose
- (x) What is the relation between D-talose and D-galactose?
- a) They are C-2 epimers. b) They are C-3 epimers.  
c) They are C-4 epimers. d) They are diastereomers but not epimers.
- (xi) Predict which of the following statements is correct?
- a) Adenine is a pyrimidine b) DNA is made of amino acids  
c) Nucleosides do not contain phosphorous d) RNA contains thymine
- (xii) In the intestine, the dietary fats are hydrolyzed by which of the following. Identify the correct one from the options.
- a) triacylglycerol lipase b) adenylate cyclase  
c) pancreatic lipase d) protein kinase
- (xiii) Write down the affect of atherosclerosis is \_\_\_\_\_.
- a) thinning blood vessels b) clotting in blood vessels  
c) thickeningf blood vessels d) none of these
- (xiv) Select which isn't true about Vit.B12?
- a) Not present in foods of vegetable sources b) Cobalt containing vitamin  
c) Extrinsic foactor of castle is required for its absorption d) SADC is due to vit. B12 deficiency
- (xv) Which of the following statements accurately describes the composition of hyaluronic acid and heparin?
- a) Hyaluronic acid is composed of repeating units of glucuronic acid and N-acetylglucosamine, while heparin consists of repeating units of iduronic acid and N-acetylglucosamine. b) Both hyaluronic acid and heparin are composed of repeating units of glucuronic acid and N-acetylglucosamine.
- c) Hyaluronic acid is composed of repeating units of iduronic acid and N-acetylglucosamine, while heparin consists of repeating units of glucuronic acid and N-acetylglucosamine. d) Hyaluronic acid is composed of repeating units of glucuronic acid and glucose, while heparin consists of repeating units of iduronic acid and glucose.

### Group-B

(Short Answer Type Questions)

3 x 5=15

2. Why are starch and glycogen non-reducing sugars? (3)
3. Describe what deficiency disease occurs in children who lack vitamin D? (3)
4. write the differentiation between saturated and unsaturated fatty acids. (3)
5. Discuss the statement that proteins are polymers of amino acids. (3)
6. How do you determine the pH of a solution with an  $\text{H}^+$  concentration of  $1.0 \times 10^{-9}$  M and discuss its relevance to human blood pH? (3)

OR

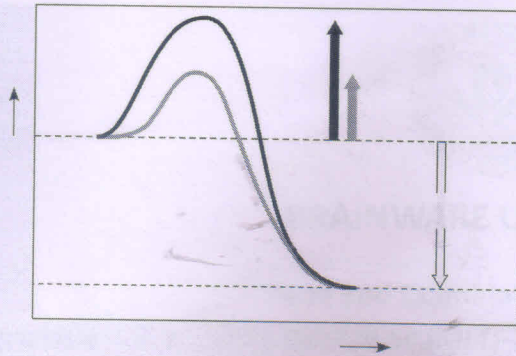
How do you determine the pH of a solution with a hydrogen ion concentration of  $3.0 \times 10^{-5}$  M and explain its possible impact on blood pH levels? (3)

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Group-C

7.



(5)

Analyze the graph on the basis of enzyme activation energy.

8. Explain how proinflammatory molecule are synthesized from fatty acid in human body. (5)
9. Explain why LB plot is more accepted than MM-equation by representation graph. (5)
10. Discuss in short - the primary structure of protein. (5)
11. Discuss the structure of Watson-crick model of DNA. (5)
12. If the acidosis occur in human body how protein regulate the body pH-Explain. (5)

OR

For maintaining body pH, several body mechanism played a critical role"- justify this one (5)  
give a proper answer with supporting explanation.

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