



**BRAINWARE UNIVERSITY**

**Term End Examination 2023**

**Programme – B.Sc.(MLT)-2022**

**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) Carrier of one carbon atom is \_\_\_\_\_ - Recognize the perfect match from following options
- |               |                |
|---------------|----------------|
| a) Folic acid | b) Vitamin B12 |
| c) Vitamin K  | d) Vitamin B3  |
- (ii) The cholesterol serves as the precursor for the following biosynthetic pathways, EXCEPT \_\_\_\_\_ - Select from the following
- |                          |                              |
|--------------------------|------------------------------|
| a) Bile acid synthesis   | b) Steroid hormone synthesis |
| c) Aldosterone synthesis | d) Thyroid hormone synthesis |
- (iii) Identify false about trans fatty acid (TFA)
- |  |   |
|--|---|
| a) Increase risk of cardiovascular disease | b) Fried foods have high content of TFA |
| c) Hydrogenation increase TFA              | d) Hydrogenation decrease TFA           |
- (iv) Point-out the cardio protective fatty acid is
- |                       |                  |
|-----------------------|------------------|
| a) Omega-3-fatty acid | b) Lauric Acid   |
| c) Oleic Acid         | d) Palmitic acid |
- (v) Choose the reason of Seborrheic dermatitis, \_\_\_\_\_ deficiency
- |                |               |
|----------------|---------------|
| a) Vitamin B6  | b) Vitamin B2 |
| c) Vitamin B12 | d) Vitamin B9 |
- (vi) Write the name of organ where urea cycle occurs
- |              |           |
|--------------|-----------|
| a) Intestine | b) Spleen |
| c) Kidney    | d) Liver  |
- (vii) From the following pH which one is perfectly match with normal pH of blood
- |        |        |
|--------|--------|
| a) 6.8 | b) 7.1 |
| c) 7.4 | d) 7.9 |
- (viii) Identify which one of the is not fat soluble vitamins from following
- |           |      |
|-----------|------|
| a) C      | b) E |
| c) Kidney | d) D |
- (ix) Select the organ where urea is mainly formed in liver and to small extent in
- |           |              |
|-----------|--------------|
| a) Spleen | b) Intestine |
|-----------|--------------|

- c) Kidney  
d) Brain
- (x) Point out the source of the nitrogen in urea cycle are  
a) Aspartate and ammonium ion  
b) Aspartate and alanine  
c) Aspartate and glutamate  
d) Alanine and glutamate
- (xi) Select which of the following are semi-essential amino acids  
a) Lysine  
b) Histidine  
c) Arginine  
d) Both 2 & 3
- (xii) Amino acid which lacks chirality and not have anomeric carbon atom is - predict from the following  
a) Glycine  
b) Lysine  
c) Leucine  
d) Phenylalanine
- (xiii) Glucose on Fehling's test gives \_\_\_\_\_. Choose the perfect option from following  
a) No reaction  
b) Silver mirror  
c) Red precipitate  
d) Pungent gas
- (xiv) Identify the which one is true according to Chargaff rule?  
a) A/T=G/A  
b) A/U=T/G  
c) A+T=G+C  
d) A+G=T+C
- (xv) Choose which of the following is true about coding strand of DNA?  
a) Also known as template strand  
b) Runs at 5'-3' direction  
c) Runs at 3'-5' direction  
d) All of the these

### Group-B

(Short Answer Type Questions)

3 x 5=15

2. Discuss about the glycosidic linkage and give example (3)
3. Explain the regulation of enzyme activity by co-factors. (3)
4. Write the differentiation between nucleotide and nucleosides with example (3)
5. Explain how the temperature affect enzyme activity with example and graph (3)
6. Calculate the pH of a 0.14 M HBr solution. (3)

OR

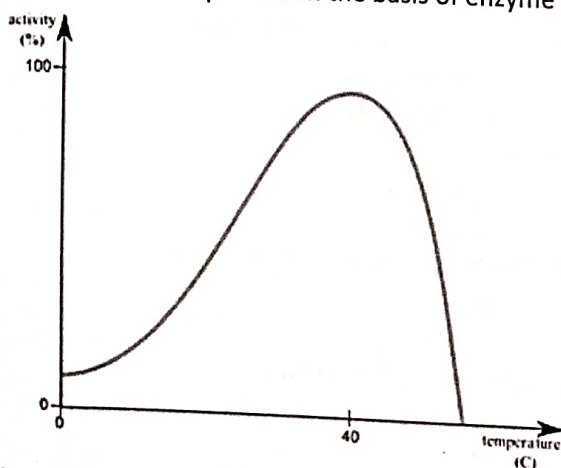
Calculate the pH of a solution with  $[H^+]=9.8 \times 10^{-10}$  M. (3)

### Group-C

(Long Answer Type Questions)

5 x 6=30

7. Analyzing and explain the process of counting the number of isomers (5)
8. Classify the different type of vitamin B and give example of coenzyme of every vitamin (5)
9. In a peptide chain adjacent amino acids' R group never situated at same side- Illustrate this (5)
10. Explain the MM-equation on the basis of enzyme activity. (5)
11. (5)



Critically analyze the graph and write the correct answer with proper example and justification.

12. if the acidosis occur in human body how protein regulate the body pH-Explain (5)

OR

Concentration of pH and the respiratory rate both are related to each other - Justify by proper explanation. (5)

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