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BRAINWARE UNIVERSITY

Term End Examination 2023
Programme – B.Sc.(MLT)-2020/B.Sc.(MLT)-2021
Course Name – General Biochemistry
Course Code - BMLT202
(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) Identify the the name of metabolic process which is common between human and bacteria
 - a) Nitrogen fixation
 - b) Mucolipid formation
 - c) nonoxidative phoshrylation
 - d) Purine biosynthesis
- (ii) 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
- (iii) Applying the knowledge of DNA structure predict which bond is perfectly creating linkage between two strands of DNA
 - a) Ionic interaction
 - b) Vander wall bond
 - c) Hydrogen bond
 - d) Covalent bond
- (iv) An amino acid that yields acetoacetyl CoA during the catabolism of its carbon skeleton will be considered as _____ - Predict the name from following
 - a) Glycogenic
 - b) Ketogenic
 - c) Both glycogenic and ketogenic
 - d) Essential
- (v) Predict which one is the most thermostable prair is
 - a) A=T
 - b) A=U
 - c) G≡C
 - d) None of these
- (vi) Select which vitamin required for carboxylation
 - a) Thiamine
 - b) Folic acid
 - c) Biotin
 - d) Vitamin C

- (vii) Select which one is anti infective vitamin
 a) Vitamin B12
 c) Vitamin B6
 b) Vitamin A
 d) Vitamin C
- (viii) Identify the name of the organelles damage due to the vitamin A intoxication
 a) Lysosomes
 c) Endoplasmic reticulum
 b) Mitochondria
 d) Microtubules
- (ix) Identify false about trans fatty acid (TFA)
 a) Increase risk of cardiovascular disease
 c) Hydrogenation increase TFA
 b) Fried foods have high content of TFA
 d) Hydrogenation decrease TFA
- (x) Identify which of the following is a water soluble vitamin
 a) Vitamin K
 c) Retinol
 b) Folic acid
 d) Tocopherol
- (xi) Point-out the cardio protective fatty acid is
 a) Omega-3-fatty acid
 c) Oleic Acid
 b) Lauric Acid
 d) Palmitic acid
- (xii) Select from the following- All serine protease is characterized by
 a) Autocatalytic activation of zymogen precursor
 c) cleavage of protein on pancreatic trypsin inhibitor
 b) Presence of Ser-His-Asp catalytic triad at the active site
 d) All of the above
- (xiii) Choose from following the pentose sugar present mainly in the heart muscle is
 a) Lyxose
 c) Arabinose
 b) Ribose
 d) Xylose
- (xiv) Select at the physiological pH which of these amino acids migrate slowest to the anode end
 a) Aspartate
 c) Valine
 b) Glycine
 d) Lysine
- (xv) Applying the knowledge of optical isomerism predict the name of amino acid which is optically inactive
 a) Proline
 c) Leucine
 b) Glycine
 d) Phenylalanine

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Write down the three condition that would alter the activity of an enzyme, explain with proper explanation. (3)
3. Describe the reaction mechanism of transamination with proper reaction. (3)
4. write the differentiation between saturated and unsaturated fatty acids. (3)
5. write a short notes on zwitter inos, with proper example. (3)
6. Calculate the pH of a solution with $[H^+] = 0.025 \text{ M}$. (3)

OR

Calculate the pH of a 0.14 M HBr solution.

(3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Calculate the pH value of a solution whose ion concentration is $4.0 \times 10^{-4} \text{ mol/L}$. (5)

8. Enumerate the different types of graphs used to study the relation of V_i versus substrate concentration a. MM-equation b. LB plot (5)
9. Discuss in short - the primary structure of protein (5)
10. Discuss how you will be derived isoelectric pH of an amino acid. (5)
11. Describe the general chemical composition of carbohydrates, lipids, and proteins. (5)
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)
