



## BRAINWARE UNIVERSITY

**Term End Examination 2025-2026**  
**Programme – DMLT-2023/DMLT-2024**  
**Course Name – Clinical Biochemistry-IV**  
**Course Code - DMLT404**  
**( Semester IV )**

**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) Excess fecal fat termed as \_\_\_\_\_. Choose the correct option.
- |                  |                         |
|------------------|-------------------------|
| a) Steatorrhea   | b) Hypercholesterolemia |
| c) Hyperglycemia | d) Hirschsprung         |
- (ii) D-xylose is type \_\_\_\_\_ sugar. Choose the correct option.
- |                 |                  |
|-----------------|------------------|
| a) Pentose      | b) keto Pentose  |
| c) aldo Pentose | d) none of these |
- (iii) What is the medical term for a heart attack?
- |                   |                          |
|-------------------|--------------------------|
| a) Cardiomyopathy | b) Myocardial infarction |
| c) Arrhythmia     | d) Angina pectoris       |
- (iv) Which of the following conditions is characterized by an underactive thyroid gland?
- |                            |                   |
|----------------------------|-------------------|
| a) Hashimoto's thyroiditis | b) Graves disease |
| c) Thyroid storm           | d) Thyrotoxicosis |
- (v) Hyperamylasemia refers to \_\_\_\_\_. Choose the correct answer.
- |                                        |                                                 |
|----------------------------------------|-------------------------------------------------|
| a) Elevated levels of amylase in feces | b) Elevated levels of serum amylase             |
| c) Elevated levels of amylase in urine | d) Elevated levels of amylase in synovial fluid |
- (vi) what do you mean by Sensitivity?
- |                                                                 |                                                                |
|-----------------------------------------------------------------|----------------------------------------------------------------|
| a) accurately measure the smallest concentration of a substance | b) precisely measure the smallest concentration of a substance |
| c) both of these                                                | d) none of these                                               |
- (vii) What is the definition of a standard deviation?
- |                                                            |                                                    |
|------------------------------------------------------------|----------------------------------------------------|
| a) A measure of the average distance of data from the mean | b) A measure of the central tendency of a data set |
| c) A measure of the dispersion of a data set               | d) A measure of the variability of a data set      |
- (viii) As stop solution we used \_\_\_\_\_.

- a) 0.6 M hydrochloric acid                      b) 0.16 M hydrochloric acid  
c) 0.6 M sulfuric acid                            d) 0.16 M sulfuric acid
- (ix) We use control and standards to ensure -  
a) Accuracy                                              b) mean  
c) mode                                                  d) precision
- (x) Which of these is not a heart disease?  
a) Hypertension                                      b) Angina pectoris  
c) Celiac disease                                    d) Atherosclerosis
- (xi) L-J chart is used for monitoring \_\_\_\_\_.  
a) precision and assessment                      b) accuracy and perfect  
c) accuracy and precision                        d) accuracy and performance
- (xii) The condition of chronic inflammation of the thyroid leads to which of the following disease.  
a) Thyroiditis                                              b) Goitre  
c) Hypothyroidism                                    d) Hyperthyroidism
- (xiii) Fatty acids released from adipose tissue are transported by circulation \_\_\_\_\_. Select the correct statement.  
a) in relation to albumin                              b) as chylomicron-transferred triacylglycerols  
c) as lecithin on the surface of HDL particles      d) None of these mechanisms
- (xiv) Flattening of the intestine villi such as celiac disease causes \_\_\_\_\_. Select the correct option.  
a) Impaired absorption of D- xylose                      b) Impaired absorption of D- hexose  
c) none of these                                              d) both of these
- (xv) Identify the function of thyroglobulin in thyroid physiology.  
a) Stimulates thyroid hormone production      b) Inhibits thyroid hormone production  
c) Serves as a precursor for thyroid hormones      d) Regulates calcium levels

#### Group-B

(Short Answer Type Questions)

3 x 5=15

2. Explain what you mean by Sensitivity and Specificity of an assay. (3)
3. Write about 3 tests to detect joint disorders. (3)
4. Summarise the use of Westgard multi-rule in quality control. (3)
5. Estimation of which pancreatic enzyme is diagnostically more important in acute pancreatitis? (3)
6. A person is suspected to have malabsorption and as a result he got tested for D-Xylose absorption test. The test results showed normal D-Xylose absorption. Interpret from the result what can be the possible cause behind the malabsorption. (3)

OR

A 36-year-old man presents with severe pain in the abdomen occurring for the first time. He looked pale, sweaty, and sick. His respirations were shallow and he stated that deep breathing was more painful. Physical findings were limited to the abdomen which was rigid to palpitation. There was tenderness when epigastrium was firmly pressed. What is the probable diagnosis and what tests you will suggest to confirm the diagnosis? (3)

#### Group-C

(Long Answer Type Questions)

5 x 6=30

7. Multiple channel analyser is separated from single channel analyser. -defend the statement with proper justification. (5)
8. Create a frequency distribution table with percentages from the age of the students in your class given below: 21, 21, 20, 21, 19, 22, 24, 25, 20, 21, 22, 22, 23, 19, 20, 21, 21, 20, 23, 24. (5)
9. Explain briefly about hyperamylasemia and fecal fat test. Write down the normal range. (5)

10. What are the risk factors that influence Rheumatoid arthritis? (5)
11. Compare and contrast between cardiac arrest, cardiac failure, stroke, heart attack and myocardial infarction. (5)
12. Homocysteine considered as most specific early cardiac biomarker than hs-CRP- Justify. (5)

**OR**

A 40-year-old female presents with sharp right upper quadrant pain and fever. She is found to have elevated serum amylase (1,000 U/L) and lipase (1,500 U/L). Her LFTs show AST (150 U/L), ALT (200 U/L), ALP (250 U/L), and a total bilirubin of 3 mg/dL. How do these findings correlate, and what is the most likely cause of her pancreatitis? (5)

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