

The West Bengal University of Health Sciences
2nd BMLT September, 2023 Examination

Subject: Advanced Biochemistry

Time: 3 hrs

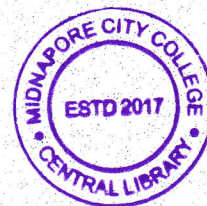
Full Marks: 100

Attempt all questions

1. Tick the correct answer : 20 x 1
- a) A substrate binds to its enzyme at a location called _____ site.
 i) Coenzyme. ii) Substrate. iii) Active. iv) Polypeptide.
- b) Urea is a final product of catabolism of :
 i) Amino acid. ii) Triglyceride. iii) Cholesterol. iv) Polysaccharide.
- c) In acute pancreatitis which one of the following is to be determined :
 i) Amylase. ii) LDH. iii) AST. iv) ALT.
- d) High salt diet causes :
 i) Primary electrolyte balance. ii) Hyponatremia.
 iii) Both i and ii. iv) None of above.
- e) Increased intake of potassium salts might cause :
 i) Hypercalcemia. ii) Hyperkalemia. iii) Hyponatremia. iv) Hyponatremia.
- f) Which is not a liver function test?
 i) Albumin. ii) ALP. iii) CK. iv) Bilirubin.
- g) The maximum energy per gram on oxidization is yielded from :
 i) Fat. ii) Protein. iii) Glycogen. iv) Starch.
- h) Which of the following statements about transamination reactions is correct?
 i) Transamination reactions involve ATP hydrolysis.
 ii) Transamination reactions are irreversible.
 iii) Transamination reactions require NAD^+ or NADP^+ .
 iv) Transamination reactions require pyridoxal-5'-phosphate.
- i) Calcium content in skeleton is :
 i) 80%. ii) 90%. iii) 99%. iv) 95%.
- j) Decalcification of bone is carried out by :
 i) Osteocytes. ii) Osteoclasts. iii) Osteoblasts. iv) All of above.
- k) Acid phosphatase is an enzyme which increases in :
 i) Gout. ii) Kidney disease. iii) Prostrate cancer. iv) All of these.
- l) Carbohydrates are organic compounds of 1. carbon 2. hydrogen 3. Oxygen :
 i) 1 and 2 only. ii) 1 and 3 only. iii) 2 and 3 only. iv) 1, 2 and 3.
- m) Alkaline phosphatase is greatly elevated in :
 i) Kidney disease. ii) Liver disease. iii) Myocardial infarction. iv) Obstructive jaundice.
- n) Dietary triacylglycerols are digested by :
 i) Pancreatic lipase. ii) Lipoprotein lipase. iii) Hexokinase. iv) None of these.
- o) Which enzyme(s) would be increased in a patient with acute myocardial infarction?
 i) Creatine kinase. ii) Acid phosphatase.
 iii) Aspartate aminotransferase. iv) Both (i) and (iii).
- p) Protein digestion is initiated in :
 i) Small intestine. ii) Stomach. iii) Large intestine. iv) Pancreas.
- q) A haemolytic anaemia, which results from maternal and fetal blood type incompatibility (Rh factor) :
 i) Haemophilia. ii) Erythroblastosis fetalis.
 iii) Sickle cell anaemia. iv) Erythroblastosis neonatorum.

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- r) The ketone bodies include acetoacetic acid, acetone, and :
 i) Lactic acid. ii) 3-hydroxy butyric acid. iii) Oxaloacetic acid. iv) Acetic acid.
- s) Blood glucose levels are directly regulated by the hormone :
 i) ACTH. ii) Insulin. iii) Thyroxin. iv) Hydrocortisone.
- t) Glycosylated hemoglobin :
 i) Indicates fasting glucose level.
 ii) Is affected by the patient's food intake on the day of testing.
 iii) Indicates blood glucose levels from preceding months.
 iv) All of these.



2. Answer the following questions : 5 x 2
- Define glycosuria.
 - Mention the normal blood level of urea and creatinine.
 - Which vitamin is needed for transamination reaction?
 - State the diagnostic importance of thyroid hormone.
 - What is Ketosis?
3. Write short notes on **any six** of the following : 6 x 5
- How blood glucose concentration can be estimated by Hexokinase Method?
 - Write a short note on urea cycle.
 - Describe Lipid-profile tests.
 - Describe the steps in glycolysis.
 - Discuss the clinical importance of serum transaminases and alkaline phosphatase in liver disease.
 - Write a short note on gluconeogenesis.
 - Describe one common metabolic disorder due to abnormal amino acid metabolism.
 - Write a short note on chylomicrons.
4. Answer **any one** of the following : 1 x 10
- Explain in detail about synthesis, transport and biochemical function of hormones of Adrenal Cortex with the abnormalities of adrenocortical function.
 - Describe the process of beta-oxidation of fatty acids.
5. Answer **any two** of the following : 2 x 15
- Write short notes on :
 - Eicosanoids and their functions.
 - Transamination and deamination of amino acids.
 - TCA cycle.
 - Define and classify lipids with examples.
 - Starvation increases synthesis of ketone bodies. Justify.