

The West Bengal University of Health Sciences
1st BMLT April, 2022 Examination

Subject: Basic Biochemistry

Time: 3 hrs

Attempt all questions

Full Marks: 100



1. Tick the correct answer :
- Purine consists of :
 - Cytosine.
 - Adenine.
 - Uracil.
 - All of these.
 - Normal body pH of human is in the range of :
 - 7.0 – 7.3.
 - 7.35 – 7.45.
 - 6.8 – 7.3.
 - 7.8 – 8.8.
 - Chemical structure of lipids consists of :
 - Glycerol + Fatty Acid.
 - Glycerol + Amino Acid.
 - Glucose + Fatty Acid.
 - Fructose + Nitrogen.
 - Vitamin that is synthesized by bacteria in the GI tract :
 - Vitamin A.
 - Vitamin C.
 - Vitamin K.
 - Vitamin D.
 - Lactate dehydrogenase exists in _____ different isozymes with various combinations of H & M subunits.
 - 4.
 - 5.
 - 6.
 - 8.
 - Glycosidic linkage at place of branching in starch and glycogen is :
 - $\alpha 1 \rightarrow 6$.
 - $\alpha 1 \rightarrow 4$.
 - $\beta 1 \rightarrow 4$.
 - $\beta 1 \rightarrow 6$.
 - Which of the following is primarily an extracellular ion within human body?
 - Sodium.
 - Potassium.
 - Iron.
 - Magnesium.
 - Wavelength visible to naked eye is :
 - 400 – 700nm.
 - 200 – 500nm.
 - 280 – 350nm.
 - 800 – 900nm.
 - Retinol belongs to :
 - Vitamin C.
 - Vitamin D.
 - Vitamin B₁₂.
 - Vitamin A.
 - Absorbance at 280nm exhibited by protein due to :
 - Aliphatic Amino Acid.
 - All Amino Acid.
 - Non polar Amino Acid.
 - Aromatic Amino Acid.
 - It has stimulating effect and is needed for muscle metabolism, repair and growth of tissue and maintaining the nitrogen balance :
 - Leucine.
 - Valine.
 - Isoleucine.
 - Lysine.
 - The nitrogen containing portion of an amino acid :
 - Side chain.
 - Amide group.
 - Amino group.
 - Amine group.
 - Which amino acid is found in high concentrations in hemoglobin?
 - Isoleucine.
 - Leucine.
 - Methionine.
 - Histidine.
 - There are _____ forms of DNA.
 - 2.
 - 3.
 - 4.
 - 5.
 - Vitamin D₃ and parathyroid hormone :
 - Decrease plasma calcium level.
 - Increase plasma calcium level.
 - Increase plasma phosphorous level.
 - Increase plasma glucose level.
 - The secretion of parathyroid hormone is promoted by :
 - Low Ca²⁺.
 - High Ca²⁺.
 - Low Fe²⁺.
 - High Fe²⁺.
 - Calcitonin is secreted by :
 - Parathyroid gland.
 - Thyroid gland.
 - Pituitary Gland.
 - Salivary Gland.
 - For the estimation of glucose concentration in blood, the vial should contain :
 - Chloride.
 - Fluoride.
 - Oxalate.
 - Oxalate + Fluoride.

P. T. O.

- s) Rickets is caused due to :
i) Vitamin D deficiency.
iii) Low level of phosphorous.
ii) Low level of calcium.
iv) All of the above.
- t) Depot fats caused due to :
i) Cholesterol. ii) Phospholipid. iii) Cerebrosides. iv) Triglycerol.
2. Answer the following : 5 x 2
- a) Name the co-enzymes that are utilized in β -oxidation of fatty acid.
b) Define Atherosclerosis.
c) State two examples each of a reducing sugar and non-reducing sugar.
d) Define ketosis.
e) State the function of vitamins.
3. Write **any six** of the following : 6 x 5
- a) What are essential and non-essential amino acids? What happens if you are deficient of amino acids?
b) What type of interactions hold the tertiary structure together?
c) State the functions of minerals in the human body.
d) Write briefly on the enzymes of the stomach that are involved in the digestion of protein.
e) State two examples of each of a monosaccharide and disaccharide. What is the principle of osozone formation?
f) Write short note on prostaglandins.
g) What are the factors that inhibit Calcium absorption?
h) Write short note of Vitamin C.
4. Answer **any one** of the following : 1 x 10
- a) What are primary, secondary and tertiary structure of proteins? What are the three major cellular functions of lipids?
b) Write short note on phosphorous metabolism.
5. Answer **any two** of the following : 2 x 15
- a) Describe the factors that promote Calcium absorption.
b) Write the sources, functions and deficiency manifestations of Vitamin D.
c) What is the role of bile in lipid digestion?



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BMLT 1st year Practical Examination April, 2022
Subject-Basic Biochemistry

Full Marks – 100

Times - 6 hrs.

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| 1. Write down the procedure of phlebotomy. | 10 |
| 2. Prepare 0.5N NaOH solution. | 5 |
| 3. You are supplied by an unknown solution marked 'A' or 'B', identify what type of carbohydrate (specific) is present in this sample? [Write answer as columns experiment, observation and inference and give a conclusion related to your findings]. | 20 |
| 4. Describe the Beer-Lambert law. Write down the principle and applications of colorimeter. Mention the components and the operating procedure of colorimeter. | $5+8+7$ |
| 5. Identify the given equipments. | 10 |
| 6. Viva-voce | 30 |
| 7. Lab notebook | 5 |
