

Medical Biochemistry Exam 2

MEDICAL BIOCHEMISTRY 2

INSTRUCTIONS: Answer all questions in this paper.

Time: 3 Hours

Section A (Multiple Choice Questions – each 1 mark)

1. Which one of the following is stored in the liver?

- A. Vitamin A
- B. Vitamin D
- C. Amino acid
- D. A and B

2. Which one of the following is not a component of a nucleoside?

- A. Ribose
- B. Guanine
- C. Deoxyribose
- D. Fucose

3. Which one of the following best explains the difference between ribose and deoxyribose?

- A. Ribose has –OH groups at carbon atom number 1,2&3
- B. Deoxyribose does not contain oxygen at the second carbon atom
- C. Ribose is found in RNA while deoxyribose is found in DNA
- D. Ribose has a single ring while Deoxyribose has two rings.

4. Which one of the following is a purine?

- A. Cytosine
- B. Guanine
- C. Thymine
- D. Uracil

5. The following are true about glucose except?

- A. It is the chief physiological sugar present in normal blood
- B. It occurs as a constituent of disaccharides and polysaccharides
- C. It is stored as glycogen in the muscles
- D. It is stored as such in the liver cells

6. Starch is a polymer of?

- A. Glucose
- B. Glucose and fructose
- C. Mannose and fucose
- D. Triose and ribose

7. The following are true about vitamins except?

- A. They do not enter tissue structures

- B.They may serve as coenzymes
- C.They are mostly provided in the diet
- D.They provide energy

8.The following are involved in the normal regulation of blood calcium level except?

- A.Vitamin
- B.Adrenaline
- C. Parathyroid hormone
- D.Calcitonin

9.The following are true about marasmus except?

- A.It is a deficiency of total calories
- B.It usually presents before the end of one year
- C.It is frequently attributed to early, abrupt weaning and inadequate diet.
- D.It is characterized by low plasma albumin level.

10.The following are pituitary hormones except?

- A.TSH
- B.ADH
- C.Prolactin
- D.Epinephrine

11.The following are true about the enzyme tyalin except?

- A.It is an α – amylase
- B.It hydrolyses α – 1 – 4 glycosidic linkages
- C.It is active at pH 6.6 – 6.8
- D.It digests carbohydrates in the stomach

12.The following are monosaccharides except?

- A.Trioses
- B.Ribose
- C.Deoxyribose
- D.Maltose

13.Essential fatty acids serve the following functions except?

- A.They form structural elements of gonads
- B.They increase fibrinolytic activity
- C.They increase fat in the liver
- D.They improve vision

14.The liver serves the following functions except?

- A.Storage of glycogen
- B.Storage of lipids
- C.Secretion of bile
- D.Detoxification of drugs

15.Steroid hormones can be characterized by the following except?

- A.They bind to cytosolic receptors
- B.They are metabolized in the kidney

- C.They are synthesized in the adrenal cortex
- D.They are synthesized in the gonads

16.The following are true about cholesterol except?

- A.It is a precursor of androgens and estrogens
- B.It is found in egg and milk.
- C.It cannot be synthesized in the body
- D.It is a major component of the plasma membrane

17.Which one of the following bonds is found in a nucleotide?

- A.Phosphodiester bond
- B.N- glycosidic bond
- C.Covalent bond
- D.Hydrogen bond

18.Which one of the following best describes an ampholyte?

- A.It is an ionized molecule
- B.It has both negative and positive charges
- C.It has either a positive or a negative charge
- D.It has equal numbers of cations and anions

19.Which one of the following best describes glycogen?

- A.It is stored in the liver
- B.It is used for energy provision
- C.It is used for maintaining blood glucose level
- D.It is the major form of carbohydrate

20.Which one of the following is not a dietary fibre?

- A.Cellulose
- B.Glycogen
- C.Lignin
- D.Pectin

Section B (Short Answer Questions – each 5 marks)

- 1.Enumerate the biological significance of polyunsaturated fatty acids.(4 marks)
- 2.Outline the fate of glucose and its utilization in the body.(6 marks)
3. Explain the role of the enzyme alkaline phosphatase in clinical diagnosis. (6 marks)
- 4.Outline the classification of amino acids . (6 marks)
- 5.Explain the relationship between cholesterol with atherosclerosis. (6 marks)
- 6.Explain the clinical significance of blood sugar level. (6 marks)
- 7.Describe briefly the various factors affecting membrane fluidity. (6 marks)

Section C (Essay Questions – each 20 marks)

1. Describe the structural and functional classification of proteins.
2. Describe the glycogen storage diseases.