QP. CODE: MB2019102

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MBBS FIRST YEAR SUPPLEMENTARY EXAMINATIONS: NOVEMBER, 2024

BIOCHEMISTRY PAPER-II

Time: 3 Hours **Max Marks: 100**

Note: Answer all questions.

Give Diagrammatic representation whenever necessary

Multiple Choice Questions: **10x1= 10**

1. Name the defective enzyme in maple syrup urine disease (Branched Chain Ketoaciduria)

a) Cystathionine

b) Phenyl alanine hydroxylase

c) Homogentisic acid oxidase

d) Oxidative decarboxylase

2. Increased gastric HCl secretion is found in

a) Zollinger-Ellison syndrome

b) Gastric carcinoma

c) Pernicious anemia

d) Gastritis

3. The serum enzyme used to evaluate pancreatic function is

a) Acid phosphatase

b) Amylase

c) Alkaline phosphatase

d) Lactate dehydrogenase

4. Which of the following enzymes are involved in Biotransformation?

a) Transaminases

b) Cytochrome P450 enzymes

c) Dehydrogenases

d) Decarboxylases

5. Which one of the following is not a protein, but an RNA molecule?

a) Amylase

b) RNA polymerase

c) Urokinase

d) Reverse transcriptase

6. An amino acid not found in proteins is

a) Homocysteine

b) Proline

c) Lysine

d) Histidine

7. Following are the beneficial effect of Reactive Oxygen Species (ROS) expect

a) Bactericidal effect

d) Reduces blood pressure

c) radiotherapy

d) Mutations

8. The most abundant protein in mammals is

a) Albumin

b) Globulin

c) Collagen

d) Hiastin

9. Which of the following is not a biologically important peptide?

a) Glutathione

b) Angiotensin

c) Vasopressin

d) Leukotriene

10. Which one of the following enzyme acts as a biomarker in the diagnosis of prostate cancer?

a) Amylase

b) AST

c) Acid phosphatase

d) Alkaline phosphatase

Essay/ Long Answer Questions: **2x15 =30**

11. A 16-year-old boy who was given blood transfusion recently had presented with chills and rigors of 2 days duration. Laboratory investigations revealed the following findings:

Serum total bilirubin: 4.8 mg/dl, Serum conjugated bilirubin: 0.2 mg/dL,

Urine Bilirubin: Negative, Van den Bergh reaction is indirect positive.

a) What is the probable diagnosis?

b) How do you relate the history and laboratory findings to confirm your diagnosis? (Use a flow chart to explain if required)

c) Describe normal bilirubin metabolism.

d) Name the test performed to identify presence of bile pigments in the urine.

(1+4+8+2)

12. Explain the structure of DNA under the following headings:

a) Using a neat a labelled diagram explains the structural organization of DNA.

b) Name the histone proteins.

c) Compare and contrast the differences between DNA and RNA.

d) Name the different forms of DNA. (8+2+3+2)

Short Answer Questions: **7x6=42**

13. Name the different levels of the structural organization of proteins. Discuss the secondary structure of proteins and add a note on the bonds responsible for stabilizing the secondary structure.

14. Write the compounds derived from glycine and their importance

15. Explain how learning influences the Physician Growth

16. What are tumor markers? Discuss the clinical utility of any three tumor markers.

17. Describe in detail the glomerular function tests. Add a note on the formulae available for calculating estimated glomerular filtration rate (eGFR).

18. Describe the structure of the haemoglobin molecule. Add a note on Thalassemia.

19. Explain with diagram the structure of IgG molecule and indicate its binding sites and function of IgG.

Very Short Answer Questions: **6x3=18**

20. Name the plasma proteins. Write the functions of serum albumin.

21. Operon Concept

22. Name the thyroid function tests. Write the reference range for T4 and TSH.

23. Post translational modifications.

24. Phase I detoxification reactions.

25. Alkali reserve.

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