QP. CODE: MB2019101

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MBBS FIRST YEAR SUPPLEMENTARY EXAMINATIONS: AUGUST, 2024

Biochemistry Paper-I

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

Note: Answer all questions.

Give Diagrammatic representation whenever necessary

Multiple Choice Questions: **10 X 1= 10**

1. Refsum's disease is due to lack of enzymes of

a) Beta oxidation b) Alpha oxidation

c) Omega oxidation d) Desaturation

2. The number of high energy phosphates consumed for the activation of fatty acids in the cytosol is

a) 1 b) 2

c) 3 d) 4

3. In competitive inhibition of enzymes

a) Km increases where as Vmax decreases

b) Km increases where as Vmax remains unchanged

c) Vmax increases while Km decreases

d) Vmax decreases while Km remains unchanged

4. All are substrates for gluconeogenesis during starvation, except

a) Alanine b) Glycerol

c) Glutamine d) Acetyl coA

5. Bacteria are engulfed by the following process

a) Phagocytosis b) Pinocytosis

c) Exocytosis d) All of the above

6. Physiological uncouplers of ETC from oxidative phosphorylation

a) Thermogenin b) Thyroxine

c) Long chain FFA d) All the above

7. Marasmus is characterized by

a) Bilateral pitting edema. b) Sparse, grey colored hair

c) Severe muscle wasting d) All the above

8. The following food item has the highest glycemic index

a) Rice b) Table Sugar

c) Ice Cream d) Legumes

9. Which of the following trace element has an antioxidant role?

a) Chromium b) Selenium

c) Zinc d) Nickel

10. Dietary requirement of thiamine increases with higher intake of

a) Carbohydrates b) Proteins

c) Cholesterol d) Lipids

Write a Long Answer Questions on the following **2x15=30**

Here is the text from the image you sent:

10. Dietary requirement of thiamine increases with higher intake of

a) Carbohydrates

b) Proteins

c) Cholesterol

d) Lipids

Essay/Long Answer Questions:

11. A 48-year-old man presented to O.P. with chest pain. Family history shows that his father died of a heart attack at the age of 46, and his elder brother also gets chest pain occasionally with an inability to climb stairs without significant chest pain and shortness of breath. His plasma cholesterol was 450 mg/dl.

a) What is the possible diagnosis?

b) What are the different types of Lipoproteins and their biological significance?

c) Discuss the cholesterol metabolism and how it is regulated.

d) Normal values of HDL and LDL cholesterol.

e) Role of statins in the above condition. (1+3+7+2+2)

12. What do you understand by enzyme inhibition? Discuss in detail the different types of enzyme inhibition. Add a note on clinical application of competitive enzyme inhibitors. (2+3+5)

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

13. Describe active transport mechanism. Give two examples where drugs inhibit active transport.

14. Describe the components of electron transport chain. Add a note on inhibitors of Electron transport chain.

15. Define PEM (Protein Energy Malnutrition). Write the types, clinical features and biochemical investigations of PEM.

16. How the Physician becomes a part of the Health Care System.

17. Explain HMP Pathway. What is the significance of this pathway?

18. Write the RDA, sources of Vitamin A and describe Wald's visual cycle.

19. Enzyme Linked Immunosorbent Assay (ELISA). Its principle and use.

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

20. Essential fatty acids.

21. Write the reference range for the following parameters:

a. Serum Sodium

b. Serum Aspartate transaminase

c. Plasma glucose (postprandial).

22. Enumerate three glycogen storage disorders along with the enzymatic defect.

23. Antioxidant vitamins.

24. Hormonal regulation of calcium level.

25. Clinical significance of HBA^1C.

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