Madhya Pradesh Medical Science University, Jabalpur

MBBS First Professional (Supplementary) Examination July-2023

Subject- Biochemistry (New Scheme)

Paper-I

Paper Code-23BN0000100031

Time: 3:00 Hours Maximum Marks :100

Instructions:

a) All questions are compulsory

b) Draw diagrams wherever necessary

c) Answers of Questions and Sub questions must be written strictly according to the serial order of question paper.

d) MCQ has to be answered in theory answer book

e) Please write MCQ answer neatly and in serial order with black or blue pen in brackets for example:- 1. (a) 2. (b)

f) MCQ has to be answered only once, any kind for repetition or cutting or erasing or whitener will be consider as malpractice.

Such answers will not be counted in the marks and action will be taken according to UFM rules of University

g) Subjective Answer should be answered in up to 30 words per marks. For example, if a question having 2 marks answer should be answered in up to 60 words.

Q.1 Total MCQs : 10 **10x1=10**

1. The marker enzyme of lysosome is:

a. Lactate dehydrogenase.

b. Cathepsin.

c. Galactosyl transferase.

d. Glucose - 6 - phosphatase.

2. What is the biochemical basis for using sodium fluoride while collecting sample for glucose estimation?

a. For better separation of plasma.

b. For inhibiting glycolysis.

c. For better separation of serum.

d. For better estimation of cholesterol.

3. The major apolipoprotein seen in chylomicron is:

a. Apo AI

b. Apo B100

c. Apo B48

d. Apo AII

4. British anti-lewisite inhibits which complex of the ETC?

a. I

b. II

c. III

d. IV

5. Glucose in Oral rehydration solution (ORS) utilize which transport mechanism:

a. Antiport system

b. Diffusion

c. Counter-transport

d. Co transport

6. One of the following enzyme is not a protein:

a. Lactase

b. Hydrolase

c. Ribozyme

d. Ligase

7. Cystic Fibrosis is due to the defect in the transport of

a. Copper ions.

b. Chloride ions.

c. Cysteine.

d. Potassium ions.

8. Which of the following causes negative nitrogen balance?

a. Androgen

b. Insulin

c. Growth hormone

d. Corticosteroid

9. Total number of ATP's generated in one cycle of citric acid cycle is:

a. 8

b. 10

c. 16

d. 14

10. To which class of enzymes is aldolase classified:

a. Ligase

b. Lyase

c. Isomerase.

d. Oxidoreductase.

Q.2 Long Answer Questions 2X20=40

a. A 23-year-old woman living alone became severely depressed after the failure in exams. Two months later she was brought to the emergency room by a friend because of weakness and lethargy. She appeared thin and pale. Questioning revealed she had not eaten for several weeks. On investigation, her ketone bodies were found to be elevated.

a) Enumerate the ketone bodies. Why were ketone bodies elevated in this case? 3

b) Draw a diagram depicting steps of ketone bodies synthesis. 5

c) Draw a diagram depicting steps of ketone body utilization. 5

f) What are the other clinical features which you see for diagnosis? 3

e) Which lab investigations would you recommend in this case? 4

b. Describe the reactions of Kreb's Cycle and its regulation? Add a note on its anaplerotic role.

Q.3 Brief Answer Questions **6x5=30**

a. Define PUFAs. Write the dietary sources, functions and deficiency features of PUFAs.

b. Malate-aspartate shuttle.

c. Write the sources, RDA & deficiency manifestations of Vitamin A.

d. Glucose tolerance test.

e. Explain various methods of cell membrane transport.

f. Explain urea cycle and add a note on its disorders.

Q.4 Short Answer Questions **10x2=20**

a. Enumerate essential amino acids.

b. Draw labeled diagram of cell membrane.

c. Enumerate biological functions of calcium.

d. Enumerate Glycogen storage disorders.

e. Diagnostic criteria for diabetes mellitus.

f. List the factors affecting Enzyme activity.

g. Define co-enzymes with example.

h. Risk factors for Atherosclerosis.

i. Define and give causes of rancidity.

j. Define Phase Two detoxification with suitable example.

****