RUHS

First Year MBBS Examination

I MBBS BIOCHEMISTRY PAPER I

Time: 3 hours

Marks: 100

Date: 12-04-2023

Instructions: INSTRUCTIONS: Attempt all questions in both sections: (Use separate answer book for each section)

Section 1

1. Fill in the blanks: (6)

a. Amino acid playing role in O transport by haemoglobin
b. Most common protein serum is
c. Lipoprotein involved in transfer of lipids from liver to peripheral tissues is
d. Vitamin synthesized from tryptophan is
e. Isoenzyme form of creatine kinase used for diagnosis of myocardial infarction is
f. Protein responsible for storage of iron is

2. Choose the correct option in the following multiple choice questions: (4)

a. Which of the following is not a part of PDH complex;
   i. Pyruvate dehydrogenase
   ii. Dihydrolipoyl transacetylase
   iii. Dihydrolipoyl decarboxylase
   iv. Dihydrolipoyl dehydrogenase

b. All are categorized as uncouplers except
   i. Thermogenin
   ii. Thyroxine
   iii. 2, 4 dinitrophenol
   iv. Carboxin

c. All are components of glutathione except:
   i. Glutamate
   ii. Cysteine
   iii. Methionine
   iv. Glycine

d. Metal with antioxidant action in glutathione peroxidase is;
   i. Copper
   ii. Selenium
   iii. Magnesium
   iv. Zinc

3. A 3 year old boy presented with hypotonia,

mental retardation, developmental delay, irritability and self-mutilating behavior. The serum uric acid was 9mg/dL. a) (15)

a. What is the probable diagnosis?
b. What is the biochemical basis of this condition?
c. What is the inheritance of this disorder?
d. What is the cause of mental retardation in this condition?
e. What is the management of hyperuricemia?

4. Write short notes on (Any five): (10)

a. Cori's cycle.
b. Bicarbonate buffer system.
c. HMG CoA reductase inhibitors.
d. Functions of Vitamin-E.
e. Phenylketonuria (A.352)
f. Galactosemia (A.278)

5. Explain briefly (Any three): (15)

a. Transamination (A. 333)
b. Regulation of glycogenolysis.
c. Gout.
d. Ceruloplasmin.

Section 2

6. Enumerate ketone bodies. Explain the reactions leading to production of ketone bodies. What is the fate of ketone bodies? (20)

7. Explain Why: (10)

a. Skeletal muscle glycogen doesn't contribute to blood glucose.
b. Vitamin -C can't be synthesized by humans.
c. Some antimalarials cause hemolysis in G6-PD deficiency.
d. Myoglobin can't be used for transport of oxygen in blood.
e. Vitamin - D is considered as hormone.

8. Explain briefly (Any four): (20)

a. Metabolic acidosis and its compensation.
b. Salvage pathway. (A.393)
c. Hypocalcaemia-causes and manifestation.
d. HDL cycle.
e. Competitive inhibition (A.94)

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