RUHS

First Year MBBS Examination

I MBBS BIOCHEMISTRY PAPER II

Time: 3 hours

Date:

12-03-2022

Max Marks: 100

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

Section 1

1. Fill in the blanks (6)

a. The Northern blot is used to demonstrate specific _____.
b. Cereals are deficient in _____ amino acid.
c. The positive direct van den Bergh's reaction indicates the presence of _____.
d. The Jumping gene is also known as _____ element.
e. The normal value of urea clearance is _____.
f. Hyperventilation is a compensatory respiratory response to _____.

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

a. All of the following are the components of 'Pre initiation

complex' Except.

a. Enhances
b. TF II D
c. TATA box
d. RNAP II

b. Which of the following is not a mechanism for mutation of DNA?
   a. Substitution of nucleotide
   b. Dimerization of nucleotide
   c. Insertion of nucleotide
   d. Deletion of nucleotide
c. Superoxide radicals can be detoxified by;
   a. Cytochrome c
   b. Cytochrome b
   c. Cytochrome a
   d. None
d. The following enzyme is widely used in recombinant DNA technology.
   a. DNA polymerase
   b. Telomerase
   c. Restriction Endonuclease
   d. None

3. A 45-year male complained of severe joint pain especially in the big toes in the early morning hours. The consultant decided to get his uric acid level in serum to be (15) estimated which was 12.0 mg/dL. He was non-vegetarian and alcoholic, he was asked to restrict the non-vegetarian dict and alcohol.

a. What is the normal level of serum uric acid?
b. What is the difference between primary gout and secondary gout?
c. Explain the biochemical basis of the symptoms in this patient.
d. How is the above disease treated?
e. Why he was asked to restrict non-vegetarian dict and alcohol?

4. Write short notes on (any five) (10)

a. Enlist the substrates of Gluconeogenesis
b. Ketosis
c. Calcitriol
d. Lesch-Nyhan Syndrome (A. 399)
e. Anion Gap (A.482)
f. Transaminases

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

a. Krebs Henseleit Cycle
b. Catabolism of Purine and its disorders
c. Functions of vitamin C (A.136)
d. Chemiosmotic theory

Section 2

6. Define lipoproteins with examples. Explain the metabolism of HDL cholesterol and its role in health and disease. (20)

7. Explain why (Any five): (10)

a. Neonates are more susceptible to develop Vitamin K deficiency.
b. Eating maize causes pellagra like symptoms.
c. Essential fatty acids helps in prevention of fatty liver.
d. Hyperuricemia is associated with Von-Gierke's disease.
e. Direct bilirubin is increased in Obstructive jaundice.
f. HbA1c is a good indicator of sugar control in T2DM.

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

a. Isoenzymes. (A.114)
b. Laboratory diagnosis of diabetes mellitus.
c. Maple syrup urine disease (A.367)
d. Antioxidant vitamins.
e. Functions of calcium

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