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1124E 364

**First Year MBBS Examination
I MBBS Biochemistry Paper 2**

Time: 3 hours

Max Marks: 100

Instructions:

1. Answer to the points.
2. Figure to the right indicates marks.
3. Use separate answer books for each section.
4. Draw diagrams wherever necessary.
5. Write legibly.

Section 1

1. Structured Long Question (any 1 out of 2) 1X10 Marks=10 Marks

a) Describe the catabolism of purine nucleotides and the disorders associated with it.

b) Describe eukaryotic translation and inhibitors of translation. Add a note on post-translational modification.

2. Case Based Scenario / Applied Short Notes (any 2 out of 3)

a) A ninth-month- **2X6 Marks=12 Marks** old infant is lethargic, irritable, vomit frequently, and has convulsions. On examination hepatomegaly was present and blood ammonia levels and glutamine levels were elevated. Urine analysis revealed a high amount of uridine, uracil, and orotic acid. I. What is the most probable diagnosis? II. Why are uridine, uracil, and orotic acid elevated? III. What is the underlying cause of this disorder?

b) A 6 years old fair, chubby boy was brought to hospital with complaints of delayed development milestones, mental retardation, seizures, and eczema. Blood phenylalanine levels were more than 30 me/dL (normal 1-2 mg/dL). The urine was tested for ferric chloride test which turns to be positive. I. What is the most probable diagnosis? II. Explain the cause of convulsions? III Why affected children often have fair

skin?

c) An adolescent girl presents with subluxation of lens and mental retardation. On examination, she is tall and thin with elongated limbs, mild scoliosis was present with Pectus excavatum and Genu valgum. One of her sisters had similar complaints. 1. What is the most probable diagnosis? 2. What is the basis of the disease? 3. Why is the risk of coronary artery disease increased in such patients?

3. Write Short Notes (any 3 out of 4)

a) Beneficial **3X6 Marks=18 Marks**

effects of Free Radicals

b) Glycemic Index

c) Newborn Screening

d) Protein Energy Malnutrition

4. Answer only in 2-3 Sentences (any 5 out of 6) **5X2 Marks=10 Marks**

a) Severe Combined Immunodeficiency

b) Z-DNA

c) Alkaptonuria

d) Specific Dynamic Action

- e) Wobble Hypothesis
- f) Beer-Lambert's Law

Section 2

5. Structured Long Question (any 1 out of 2) 1X10 Marks=10 Marks

- a) Describe the metabolism of Tryptophan and diseases related to it, What are the biologically important substances produced by Tryptophan?
- b) Describe the sources, biochemical function, RDA, and deficiency manifestations of vitamin A.

6. Write Short Notes (any 2 out of 3)

- a) Folate trap. **2X6 Marks=12 Marks**
- b) Inhibitors of Replication
- c) Vitamin C and its deficiency manifestations.

7. Write Short Notes (any 3 out of 4)

- a) Balanced Diet **3X6 Marks=18 Marks**
- b) Protein targeting
- c) Selenium and its functions
- d) Thyroid function test

8. Answer only in 2-3 Sentences (any

5 out of 6)

5X2 Marks=10 Marks

- a) Diseases-treated by gene therapy
- b) Zwitter Ion
- c) Limiting Amino Acids
- d) Active form of vitamin B₁₂
- e) Ehlers-Danlos Syndromes
- f) Albinism

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