

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MBBS 0323]

MARCH 2023

Sub. Code : 6056

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2019-2020)

FIRST YEAR – SUPPLEMENTARY (CBME)

PAPER II – BIOCHEMISTRY

Q.P. Code: 526056

Time: Three hours

Maximum : 100 Marks (80 Theory + 20MCQs)

Answer All Questions

I. Essay: (2 x 15 = 30)

1. A 6 year old boy presents with periodic aggressive behaviour. His urinary ALA is elevated. On examination, he is icteric. A mild hepatomegaly is observed. Blood examination revealed massive elevation of AFP. HPLC and Tandem Mass Spectrometry examination revealed elevation of succinylacetone. A diagnosis of Type I Tyrosinemia is made.
 - a) What is the most probable enzyme defect? And why does he present with elevation of ALA and neuropsychiatric manifestation?
 - b) Describe in detail all tyrosine metabolism disorders.
 - c) Add a note on special products formed from Tyrosine.
2. What is cloning? Mention the various types of cloning. Describe in detail the steps involved and tools required in recombinant DNA technology.

II. Write notes on: (10 x 5 = 50)

1. Purine salvage pathway.
2. Explain the role of lungs in acid base homeostasis
3. A 5 year old boy brought to the hospital with complaints of mental retardation, hypopigmented patches all over the body and mousy odour of urine. On examination his eyes were blue. What is the most probable diagnosis and What is the defective enzyme? Explain the biochemical basis of the clinical features seen in this boy.
4. Serum protein electrophoresis.
5. Cell cycle.
6. Role of Parathormone in Calcium, Phosphate homeostasis.
7. Define Xenobiotics and add a note on the various detoxification reactions.
8. Mutation.
9. Secondary structure of protein.
10. A patient had seizures and usually appeared weak, tired and showed deposition of brown coloured ring in the descemet's layer of the cornea and hepatomegaly was noted.
 - a) Name the disorder.
 - b) Which mineral metabolism is deranged?
 - c) What is the biochemical defect?
 - d) Mention the functional role of concerned mineral.
