M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2020 -2021 Onwards)

FIRST PROFESSIONAL – (CBME) - SUPPLEMENTARY

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. Explain how mRNA synthesized in the cytoplasm is translated into a protein with suitable diagram? Add a note on Post translational modification.
2. Explain how Phenylalanine is both a ketogenic and glucogenic amino acid. Add a note on inborn errors associated with Phenylalanine.

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

1. Write a note on the following:
   a) Hartnup's disease.
   b) Secondary orotic aciduria.
   c) How does the supplementation of vitamin B6, B12 and folic acid help in the management of homocystinuria.
2. Short note on the DNA repair system which is defective in hereditary nonpolyposis colon cancer. Mechanism of action of Methotrexate and Actinomycin D as anticancer drugs.
3. A 5-year-old male child with uneventful birth history was brought with c/o self injurious behavior, irritability and emotional lability for the past 2 years. From the age of 3 yrs he started biting his lips, tongue and banging his head over the wall and scratching his face (self-mutilation). Developmental history revealed delayed milestones. Serum uric acid level was 9.5 mg/dL.
   a) What is your probable diagnosis?
   b) Enumerate the biochemical basis of the neurological manifestations in this disease.
   c) Discuss the salvage pathway for Purine synthesis.
4. Explain the catabolism of Tryptophan to serotonin and its clinical features.
5. Mention five tumour markers with their diagnostic importance.
6. What are the types of gene therapy? Give examples of any three diseases for which gene therapy has beneficial effects?
7. Polymerase chain Reaction.
8. How will you explain to the patient that his blood cholesterol levels are high?
9. What is quality control? Explain the types of quality control.
10. Interpret the following Liver Function Test report:

Total bilirubin	Direct bilirubin	Alkaline phosphatase	Ehrlich's test	Stool sample
7.7 mg/dL	3.6 mg/dL	265 IU/L	Negative	Clay colour

   a) What is the probable diagnosis?
   b) Mention the possible causes for the above condition.
   c) Substantiate with reasons for increase in conjugated fraction of Bilirubin.

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