



All India Institute of Medical Sciences, Kalyani
First Professional MBBS Examination 2022 (Batch-2021-22)

Time: 3 Hrs.

Biochemistry (Paper-II)

Marks: 100

INSTRUCTIONS:

- Answer all questions.
- Illustrate your answers with well labelled diagram wherever necessary.
- Answer each section in a separate answer book.

SECTION - A (50 MARKS)

1. What are immunoglobulins? Draw a labelled diagram. Discuss different classes of immunoglobulins with their functions. What is the difference between an immunoglobulin and an antibody? (2+1+5+2=10)
2. Describe the Phase I reaction of Xenobiotic metabolism. Cite an example of Phase II reaction. (3+2=5)
3. Write short note on metabolic alkalosis and its compensation (5)
4. Explain with diagram/ flow chart (2.5X2=5)
 - a. Classical pathway of complement activation
 - b. Humoral and cellular immunity
5. Write short notes on enzymatic and non-enzymatic antioxidants (5)
6. Define BMR. Describe the factors that affect BMR (2+3=5)
7. Explain the role of lung and kidney in maintaining acid base balance (5)
8. Compare and contrast: Kwashiorkor and Marasmus (5)
9. Discuss the different mechanisms of autoantibody formation (5)

SECTION - B (50 MARKS)

1. A 12 year old boy presented at dermatology clinic with skin tumour on one of his cheeks. He suffered skin blisters on exposure to sunlight. His skin has scattered area of hyperpigmentation and other areas looked mildly atrophied. (2.5X4=10)
 - a. What is the probable diagnosis?
 - b. What type of disease is this?
 - c. What is the defect in this disease?
 - d. What is the basis behind the defect?
 2. Describe purine salvage pathway. Add a note on gout (3+2=5)
 3. Write short notes on: (2.5+2.5=5)
 - a. Liver function test
 - b. Creatinine clearance
 4. Write short notes on (2.5+2.5=5)
 - a. RNA editing
 - b. Post-translational modification
 5. In DNA replication, diagrammatically explain why the Okazaki fragments lag behind the leading strands? (5)
 6. Diagrammatically represent the mechanism of action of steroid hormones and peptide hormones (5)
 7. What is proto-oncogene? Briefly describe the process of viral oncogenesis. (1+4=5)
 8. What is cDNA? Describe the differences of cDNA library and genomic library (1+4=5)
 9. Write short note on Thyroid function test (5)
-