



All India Institute of Medical Sciences, Kalyani
1st Professional MBBS Examination 2020

Time: 3 Hrs.

Biochemistry (Paper-II)

Marks: 100

INSTRUCTIONS:

- Answer all questions and draw well labelled diagrams wherever necessary.
- Answer Sections A and B in separate answer booklets.
- Write answers in sequence and strike off all blank pages

Section A

Total Marks: 50

1. A 20-year-old girl has developed yellowish discoloration of the skin. Her urine showed deep yellow color. Liver function test was done. The results showed total bilirubin is 5mg/dl and conjugated bilirubin is 2.3mg/dl, AST and ALT levels in serum were 800 U/L and 780 U/L respectively. (Normal reference range is < 40 U/L for both). ALP level did not show any significant elevation. **[2+3+3+2 = 10]**

- (a) What would be the most probable diagnosis?
- (b) Explain the results of bilirubin in this case
- (c) Comment on the levels of the enzymes and their significance
- (d) In which type of jaundice ALP level increases significantly.

2. Differentiate between:

[5 X 3 = 15]

- (a) Kwashiorkor and marasmus
- (b) Uncompensated and compensated metabolic acidosis
- (c) Humoral immunity and cell-mediated immunity

3. Write short notes on:

[5 X 5 = 25]

- (a) Role of cytochrome p450 in metabolism of xenobiotics
- (b) Enzymes and minerals having anti-oxidant property
- (c) Classification and function of immunoglobulins
- (d) Plasma buffers
- (e) Role of glutathione in cell physiology



Section B

Total Marks: 50

1. A 45-year old man presented with complaints of gain in weight within last four months. He developed rounded face and in the upper back there was fat deposits. His skin showed bruise marks. He had been tested to have fasting hyperglycemia and hyperlipidemia. His ACTH level was recorded to be low and urinary free cortisol level was very high. **[2+4+2+2 = 10]**

- (a) What is the likely diagnosis?
- (b) Why there was hyperlipidemia and hyperglycemia?
- (c) Comment on the ACTH and cortisol level recorded.
- (d) What is the role of dexamethasone suppression test?

2. Differentiate between:

[5 X 3 = 15]

- (a) Mechanisms of action between peptide and steroid hormones
- (b) RT-PCR and antigen-based testing for COVID diagnosis
- (c) mRNA and microRNA

3. Write short notes on:

[5 X 5 = 25]

- (a) Tumor markers
- (b) Chemical carcinogen
- (c) Restriction fragment length polymorphism and its application in genetic diagnosis
- (d) Gouty arthritis
- (e) Renal function tests