1124E 359

First Year MBBS Examination

I MBBS Biochemistry Paper 1

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 (10)

a) Describe the dynamics of blood glucose homeostasis. What are the roles of the hormones in blood glucose homeostasis?

b) Describe Heme synthesis and its regulation. Add a note on various

Porphyria.

2. Case Based Scenario / Applied Short Notes (any 2 out of 3) 2X6 Marks=12 Marks (12)

a) A newborn baby developed yellowish discoloration on 3 day of life. He was treated with phototherapy.

i. What is the most probable diagnosis?

ii. Name the tests that will help with the diagnosis.

iii. Explain the role of phototherapy in treatment.

b) A young lady who had consumed a large dose of aspirin in a suicide attempt was admitted to the hospital. Her blood gas analysis gave the following findings:-Parameter Obtained value; pH of the blood 7.5 pco, 16 mmHg: Anion gap 26 mEq/L H

i. What is your probable diagnosis?

ii. What is the cause of the anion gap in the above case?

iii. What are the body's defense mechanisms to maintain pH?

c) A teenage boy came to the physician with a complaint of frequent fatigue while playing. He also complained of painful muscle cramps on exertion. Blood sample collected during exercise revealed low glucose, lactate, and pyruvate levels.

i, What is the most probable diagnosis?

ii. Name the enzymes deficient in the above case

iii) What is the cause of iow lactate and pyruvate in the above case?

3. Write short notes (any 3 out of 4)

a) Inhibitors 3X6 Marks=18 Marks (18) of Electron transport chain

b) Creatinine Clearance Test

c) Tumor Markers

d) Importance of effective communication in the medical field

4. Auswer only in 2-3 Sentences (any

5 out of 6) 5X2 Marks=10 Marks (10)

a) Products of Tyrosine

b) domains of learning

c) Ketosis

d) Types of Immunoglobuli

e) Tamm- Horsfall protein

f) Active transport snopes

Section 2

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

a) Enumerate blood buffer systems. Describe the role of buffers, kidneys, and lungs in the maintenance of acid-base balance.

b) What are the different types of enzyme inhibitors? Explain with suitable examples,

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

a) Oxidation 2X6 Marks=12 Marks (12) of oddschain fatty acids

b) Hyperkalemia

c) Enzyme Linked Immunosorbent

Assay

7. Write Short Notes (any 3 out of 4)
a) 3X6 Marks=18 Marks (18)
Cytochrome P450
b) Refsum disease
c) Innate Immunity
d) Oncogenes

8. Answer only in 2-3 Sentences (any 5 out of 6) 5X2 Marks=10 Mark (10)
a) Essential and Semi-essential Amino Acids
b) Differentiate between Hexokinase and Glucokinase
c) Explain the cause of congenital cataracts in Galactosemia
d) Why intake of alcohol leads to hypoglycemia
e) Lipotropic factors
f) Insulin-dependent tissues