

C 2745

First Year MBBS Examination

I MBBS Biochemistry Paper 1

Time: 3 hours Date: 10-10-2019 Max Marks: 50

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. Give an account on any two: (10)
 - a. Metabolism of HDL and add a note on Frederickson's classification of hyperlipidemia.
 - b. Diagnostically and therapeutically important enzymes,
 - c. Role of renal system in regulation of plasma pH and state the reference range of plasma pH.
Add a note on Anion Gap.
 2. Write short notes on any three (9)
 - a. Oxidative phosphorylation and its inhibitors.
 - b. Thyroid function tests.
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- c. Role of renin-angiotensin aldosterone in maintenance of water balance,
 - d. Role of Debranching enzyme, Add a note on Von-Gierke's disease,
 - e. Air pollution,
3. Read the following case and answer the below mentioned related questions: 12 year old African boy was brought to the hospital by his parents with complaints of (6) recurrent joint and bone pain. He does report feeling tired and fatigued easily on mild work. On examination his conjunctiva and mucosal membranes are slightly yellowish. Laboratory investigations revealed following results : Hemoglobin 7.1 g/dl (Normal 11-13 gm/dl) Total Bilirubin 2.2 mg/dl (Normal 0.2-1.0 mg/dl) Indirect Bilirubin 2.2 mg/dl (Normal 0.2-0.8 mg/dl) Direct Bilirubin 0.2 mg (Normal 0-0.2 mg/dl) Hematocrit 22% (Normal 40-54%) He was diagnosed with Sickle cell disease.
- a. Other than the blood smear examination which test help in the diagnosis of the sickle cell condition? What treatment policies to be advised to this patient?
 - b. What is the molecular defect in sickle cell
 - c. What is sickle cell trait condition?
 - d. Why patient was getting easily fatigued?
 - e. What is sickle cell crisis?
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- f. State the reason behind yellowish coloration of conjunctiva and mucosal membranes.

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Section 2

1. Give an account on any two: (10)
 - a. State the differences between competitive & non-competitive inhibition. Add a note on useful competitive inhibitors.
 - b. Gluconeogenesis and its importance.
 - c. Reactive oxygen species-its generation in living cells & effect on human health Add a note on lipid peroxidation.
 2. Write short notes on any three (9)
 - a. Tumor Markers
 - b. Fatty liver.
 - c. Metabolism of alcohol. Add a note on laboratory findings and biochemical alterations in alcoholism.
 - d. Ion channels-its role in transport of substances across cell membrane.
 - e. Principle and applications of Radioimmuno Assay (RIA)
 3. Comment and justify on any six of the following (6)
 - a. Viper bite causes severe hemolysis.
 - b. Lactulose is useful in the treatment of hepatic encephalopathy.
 - c. Aspirin is used as an anti-inflammatory drug.
 - d. In obstructive jaundice, feces are clay colored but urine is darker in colour.
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- e. Recurrent pyogenic infection by staphylococci are common in chronic granulomatous disease.
- f. Lipoprotein (a) is strongly associated with myocardial infarction.
- g. Glucose is administered to relieve an attack of acute intermittent porphyria.
- h. Cholinesterase enzyme activity decreases in organophosphorus poisoning.

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