Printing page (s): 1 Paper Code: MBBS -105

Roll No. | | | | | | | | | | |

M.B.B.S.

First Professional Main Examination, Aug. 2014

Biochemistry –I

Time: Three Hours] *[Maximum Marks: 50*

Note: Attempt all questions. Use separate answer sheets for part A & Part B. Parts of a question must be attempted in sequence. Draw well labeled diagram wherever necessary.

Section –A

1. With the help of a labeled diagram describe how Km is influenced by competitive and non –competitive inhibitors of an enzymative reaction. [05

2. Describe [2 ½x2
   a. Antibody affinity and avidity.
   b. Cells of immune system and their development.

3. Draw a labeled diagram showing the oxygen dissociation curve of Hemoglobin. Discuss the role of factors that shift it to the left or right. [05

4. Explain reasons: [2x5
   a. Isozymes have better diagnostic significance than total enzyme assay.
   b. Patient on diabetes ketoacidosis tend to hyperventilate.
   c. Hypoglycemia seen in von Gierke's disease.
   d. Impact of fast food on metabolism.
   e. Anaphylaxis.

Section –B

1. Enumerate the reactions leading to complete oxidation of glucose. How many ATPs are generated during the entire process? What happens to the entire process when diet rich in fast foods (hamburgers/pizzas/samosa/pakodas/mithais and soft drinks), are consumed? Explain. [10

2. Discuss the diagnostic criteria for diabetes mellitus. What are the possible long term complications of the disease? How does microalbuminuria and HbA_{1c} contribute to the follow up of this condition? [10

P.T.O.

3. A 60 year old man presented with complaints of upper abdominal pain, anorexia, generalized pruritus and weight loss. He gave history of passing of high coloured urine and clay coloured stools. Investigation revealed the diagnosis of malignancy of the head of pancreas. [1x5

Laboratory investigations revealed the following-
Serum bilirubin (total): 8.5 mg/dl;
Total proteins: 7g/dl;
Albumin: 3.9g/dl;
ALP: 605 IU;
AST: 80 IU/L;
ALT: 85 IU/L
Answer the following –

a. Describe the type of hyperbilirubinemia in this case.
b. What abnormalities are expected in the urine of this patient.
c. What is the cause of increased ALP in this case.
d. Explain the reason for altered stool characteristics.
e. What is the reason for pruritus.

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Printing page (s): 1

Paper Code: MBBS -106

Roll No. | | | | | | | | | | |

M.B.B.S.

First Professional Main Examination, Aug.2014

Biochemistry –II

Time: Three Hours] *[Maximum Marks: 50*

Note: Attempt all questions. Use separate answer sheets for part A & Part B. Parts of a question must be attempted in sequence. Draw well labeled diagram wherever necessary.

Section –A

1. Discuss the steps of uric acid synthesis. How does allopurinol contribute to the treatment of Gout. [5
2. Discuss the steps of Polymerase chain reaction. State its applied importance. [5
3. What is the biochemical defect in Phenylketonuria. Discuss the biochemical and clinical findings. What is Guthrie's test. [5
4. Answer briefly: [2x5
   a) Biochemical and clinical significance of transaminases.
   b) Biochemical basis of methanol poisoning and its treatment.
   c) Factors enhancing and inhibiting iron metabolism.
   d) Anion gap and its clinical interpretation.
   e) Explain the mechanism of action of erythromycin.

Section –B

1. What are xenobiotics. Discuss in detail the significance and steps of xenobiotic metabolism. [10
2. Discuss the steps of prokaryotic transcription. What are the different types of post-transcriptional modifications in a eukaryote. [10
3. Discuss tumor markers with its examples. What is tumor suppressor gene. Explain its function. [5

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