First Year MBBS Examination

I MBBS Biochemistry Paper 2

Date: 06-12-2017

Time: 3 hours

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 of: (any two) (10)

a. Causes and deficiency manifestations of Vitamin B12
b. Homocystinuria and transmethylation reactions
c. DNA repair mechanisms (A. 562) (C. 537)

2.Write Short notes on (any three) (9)

a. Telomere and function of telomerase

b. Causes of primary Gout and its treatment policies (A. 548) (C. 394)
c. Use of radioisotopes in medicine (A. 682) (C. 717)
d. Applications of Recombinant DNA technology (A. 600) (C. 579)
e. Post transcriptional modification (A. 572) (C. 547)

3.Write Short notes on (any two) (6)

a. Glycemic index
b. Metabolic adaption in fed and starvation condition (A. 122) (C. 383)
c. Kwashiorkor and associated metabolic alterations

Section 2

4.Give an account on (any two) (10)

a. Sources, absorption transport functions and disorders of calcium (A. 492)(C. 404)
b. Enumerate antioxidant vitamins and explain their role as antioxidant (A. 429) (C. 659)
c. Explain sulphur containing amino acids (A. 275) (C.361)

5.Write Short notes on (any three) (9)

a. Sources of purine formation
b. Phenylketonuria (A. 292) (C. 351)
c. Salvage pathway (A. 546) (C. 391)
d. Functions of copper in body
e. Niacin

6.Read the case report and answer the following Questions (any six) : A 3 year old boy was admitted to pediatric ward of a a-government hospital due to pain in (6)

abdomen. He has severe palor of skin, which prompted pediatrician to order his hemoglobin estimation in the laboratory, it was 3 gm % considering his tribal origin,

possibility of sickle cell disease was suspected. Laboratory was requested to test his blood for the possibility of sickle cell disease. Patient's hemoglobin was found

insoluble in low oxygen solution. Electrophoresis showed that the patient had only HbS while both parents had HbS and HbA

a. Write primary structural defect in the patient's hemoglobin
b. Why the patients had Hemolytic anamia?
c. Why the patient's hemoglobin was not soluble in low oxygen solution?
d. Why HbS move slower towards anode during electrophoresis at PH 8.6?
e. Why the patient did not suffer from anaemia right from the birth?
f. Which are the other abnormal hemoglobin?
g. HbF has a high affinity for 02 than HibA
h. Why sickle cell disease carriers' have an advantage in surviving malarial parasite?

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