First year M.B.B.S Examination

June / July - 2016

Biochemistry: Paper –II

Time: 2.30 hours Code : 9667 Total Marks: 50

Instruction: (1) Use separate answer books for each section
(2) Answer should be to the point and handwriting should be readable
(3) Draw flow charts wherever applicable.

SECTION –I

1. State true or false with justification on **any five** **10**
   a) In diabetic patients entry of glucose into muscles is only half of the normal cells
   b) Child suffering from Phenylketonuria is mentally retarded and has hypo pigmentation.
   c) cAMP acts as second messanger
   d) Acute alkalosis is associated with hypokalemia
   e) Gouty attacks may be precipitated by the increased intake of high purine diet and alcohol
   f) Ketosis leads to metabolic acidosis

2. Discuss any **one** **6**
1. Glucose tolerance test
2. Acid base disturbances

3. Write short notes on any **three** **9**
   a) Complex I & II of ETC
   b) Digestion and absorption of Lipids
   c) Disorders of Iron metabolism
   d) Heme biosynthesis

P T O

SECTION II

4. Write comments on any **five** 10

1) Glucose- Alanine cycle is important during starvation
2) LCAT deficiency leads to atherosclerosis
3) Folate analogues have a role in treatment of cancer
4) Plasma level of glutamine increase after a high protein diet
5) Rh iso-immunization occurs in second pregnancy
6) Biochemical alterations seen in blood and urine in different types of jaundice

5. Write short notes on any **three** 9

a) Marasmus and Kwashiorkor
b) ketogenesis
c) Sickle cell disease
d) Disorders of tyrosine metabolism

6. Read the case history and answer the question given below 6

A 40 years old man was brought to casualty by the traffic police and on admission, he was disoriented, drowsy and was smelling of alcohol. Blood sample was sent to the biochemistry lab for estimation of plasma alcohol level and for performing other relevant investigations. History was obtained from his wife who had fortunately escaped without sustaining any major injury. She admitted that her husband had been a heavy drinker for the past 20 years, drinking about three bottles of whisky per week. Moreover, he had frequent episodes of excruciating pain in his big toe for the past several months.

Results of the biochemical investigations were returned after one hour.

Investigations test	**Patient's report**	**Reference range**
Glucose (random)	62 mg/dL	>140 mg/dL
Urea	35 mg/dL	15–45 mg/dL
Urate	7.8 mg/dL	3.0–7.0 mg/dL
Na1	142 mmol/L	135–145 mmol/L
K1	4.6 mmol/L	3.6–5.0 mmol/L
Lactate	3.8 mmol/L	0.4–1.4 mmol/L

The House-Officer admitted the patient with a preliminary diagnosis of lactic acidosis. Early in the next morning, the patient had an attack of spasmodic pain in big toe. Treatment with allopurinol was started and serum urate level was monitored. On the third day of the treatment, the urate level decreased and the patient was discharged.

Q.1. What is the probable diagnosis of this case 1
Q.2. What is the origin of plasma lactate in this patient 1
Q.3. How are patient's signs and symptoms related to ethanol abuse 1
Q.4. Why blood glucose level should be meticulously monitored in this patient 1
Q.5. write the mechanism of action of allopurinol 2