DAH-M-20176-O

Seat No. _____

First Year M. B. B. S. (W.E.F. 2016) Examination

April - 2022

Biochemistry : Paper - II

(Old Course)

Time : **3** Hours] [Total Marks : **50**

Instructions : (1) Each section to be answered in separate answer book.

(2) Answers should be brief and to the point.

SECTION - I

1 State true or false with reasons on any six : **1×6-6**

(a) Lactate is the end product of glycolysis in RBCs.

(b) LDL prevents thrombus formation.

(c) Citric acid cycle is an amphibolic pathway.

(d) Glucuronic, acid is important in bilirubin detoxification.

(e) Bile pigments are essential for fat absorptions.

(f) Glucagon enhances the uptake of glucose into adipose cells.

(g) Small doses of histamine may cause extreme vascular collapse.

2 (a) Read the following case, report and answer the questions : **1×5=5**

One evening, a smart 46-years old male business executive entertained a party in which much food and alcohol had been consumed. In the next early morning, he woke up with excruciating pain in ankle. He was admitted in hospital. On examination, he had fever. His ankle joint was swollen and red, felt hot to touch, and was very tender and stiff. No other joints were involved. Lymph glands were normal, not tender. Routine peripheral smear revealed mild granulocytosis. The laboratory findings :

Biochemical parameter	Patient report	Reference range
Blood glucose	130 mg/dl	70-110 mg/dl
Blood urea	38 mg/dl	15-45 mg/dl
Serum creatinine	1 mg/dl	0.6-1.7 mg/dl
Serum uric acid	11 mg/dl	3.5-8 mg/dl
Plasma lactic acid	20 mg/dl	5-12 mg/dl
Urine pH	6.2	6.8

Questions :

(i) What is the most probable diagnosis?

(ii) What are the types and causes of hyperuricemia?

(iii) What are tophi? What is normal serum uric acid level?

(iv) What is allopurinol? Why it is used to treat hyperuricemia?

(v) Why alcohol intake precipitates gouty attack?

(b) Discuss the following: **3+2=5**

(i) Antherosclerosis

(ii) Late complications of diabetes mellitus

3 Write short notes on any three : **3×3=9**

(i) Digestion and absorption of lipids

(ii) HMP-Shunt-pathway and significance

(iii) Beta-oxidation and its energetics

(iv) Metabolism of tyrosine and associated disorders.

SECTION - II

4 Give your comments with justification on any six : **1×6=6**

(a) Leucine is strongly ketogenic amino acid.

(b) Fluoride is a potent inhibitor of glycolysis.

(c) Tryptophan malabsorption causes pellagra.

(d) Brain cannot utilize free fatty acids for energy purpose.

(e) Frame shift mutation is more dangerous than point mutation.

(f) Glycine is essential for synthesis of purine nucleotides.

(g) Barbiturates precipitate an attack of acute intermittent porphyrias.

5 Discuss any two of the following : **5×2=10**

(a) Gluconeogenesis and its substrates

(b) Fatty acid synthesis

(c) Purine biosynthesis and its regulation

6 Write short notes on any three : **3×3=9**

(a) DNA replication

(b) Liver function tests (LFT)

(c) Polymerase chain reaction (PCR)

(d) Tumor markers.