

Duration : 2 hours

Max Mark: 50

Q: 1 Write Notes (2 out of 3)

(08 Marks)

1. Write acute & chronic complication of diabetes mellitus and give biochemical explanation of diabetic ketoacidosis.
2. Beta Oxidation of Long Chain Saturated fatty acid (Palmitic acid – 16c) and explain energy production from it.
3. Cause of Acid-Base alteration. Explain its interpretation through arterial blood gas analysis

Q: 2 Describe in brief (4 out of 6)

(12 Marks)

1. Advance Glycated End product
2. Significance of NADPH
3. Polyol pathway and its significance
4. Effect of Alcoholism on gluconeogenesis as well as on beta oxidation of fatty acid.
5. Formation of eicosanoids and explain its inhibitors with significance.
6. Type and Functions Lipoproteins & Apo-lipoprotein

Q: 3 Write answer in few line (5 out of 6)

(05 Marks)

1. Difference between cholinesterase and pseudocholinesterase.
2. Name the Mucopolysaccharide (Glycosamino glycans)
3. Function of Phospholipids
4. Significance of Cholesterol
5. Clinical significance of Dietary fiber
6. Kwashiorkor & Marasmus

Q: 4 Read the case & answer the questions

(10 Marks)

55 years old male patient came in emergency with complain of breathlessness and unconsciousness. He was known case of Chronic renal failure with diabetes mellitus. He was having history of anuria (<100 ml urine output in 24 hours). On examination it was found that Patient has edema on face & legs because of fluid congestion. His tongue & conjunctive were also pale. He was having increase respiratory rate (tachycardia). He was investigation. Reports are below.

		<u>Reference Range</u>
Blood Sugar	= 200 mg%	<140 mg%
Serum Creatinine	= 5.0 mg%	0.4 – 1.2 mg%
Serum Sodium	= 140 mmol/L	135 – 145 mmol/L
Serum Potassium	= 6.5 mmol/L	3.5 – 5.0 mmol/L
Serum Calcium	= 7.0 mg%	8.5 – 11.0 mg %
Haemoglobin	= 8 gm%	13.5 – 16.5 gm%

Arterial Blood Gas Analysis

pH	= 7.20	7.35 – 7.45
pO ₂	= 90 mmHg	85 – 100 mmHg
pCO ₂	= 25 mmHg	35 – 45 mmHg
HCO ₃ ⁻	= 08 mmol/L	22 – 28 mmol/L

Urine Examination

Protein	= + (Microproteinuria)
Sugar	= + + + + (Present)

Doctor diagnosed it was case of Diabetes Mellitus with Diabetic nephropathy with Chronic renal failure

1. What is biochemical explanation of serum calcium level & effect on Serum Parathyroid hormone level in this case?
2. What is interpretation of arterial blood gas analysis?
3. What can be reason for hyperkalemia ?
4. Why hemoglobin level decreases in case of chronic renal failure?
5. Why fruit juice cannot be given to patients of renal failure?

Q:5 Write Justification (Answer in few lines) (5 out of 7)

(10 Marks)

1. Acute alcoholism can trigger gouty arthritis.
2. Snake bite causes severe haemolysis of RBCs.
3. TCA cycle is amphibolic in nature.
4. Primaquine administration in G6PD deficient patient can precipitate Hemolytic anaemia.
5. For estimation of blood sugar, blood is collected in fluoride bulb.
6. HDL is involved in "Reverse Cholesterol Transport"
7. Eicosapentaenic acid and docosahexaenoic acids (DHA) in food are good for health.

Q:6 Write Answer in Few line (5 out of 6)

(05 Marks)

1. Difference between Glucokinase & Hexokinase
2. Lactase enzyme deficiency cause diarrhea after milk ingestion.
3. C-peptide
4. Von-Gierke's disease
5. Scurvy
6. Rancidity of fatty acid