

Duration : 2 hours

Max mark: 50
(08 marks)

Q: 1 write notes (2 out of 3)

- a) Effect of alcoholism on metabolisms.
- b) Polyol pathway and it's significant in case of diabetes mellitus
- c) Carnitine shuttle & explain energy formation from 18 carbon even chain fatty acid (stearic acid) beta-oxidation

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

- a) Role of Lipoprotein(a) in atherosclerosis.
- b) Type and function of apo- lipoproteins
- c) Digestion and absorption of lipid.
- d) Biochemical explanation for diabetic ketoacidosis.
- e) Significant of HMP Shunt pathway & NADPH.
- f) Eicosonoid and it's inhibitor

(12 marks)

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

- a) Difference between liposome & micelle
- b) Difference between blood & renal buffer mechanism
- c) Write 6 risk factor for atherosclerosis
- d) Body Mass Index and it's significant.
- e) Definition & significant of Advance Glycated End Product
- f) Segregate following condition in either "risk factor" or "complication" of obesity
 - Hypothyroidism, diabetes mellitus type-2 , ingestion of oral contraceptive pills (contain estrogen & progesterone) , osteoarthritis , Sedentary life style , sleep apnea

(05 marks)

Q: 4 Read the case & answer the questions

(10 Marks)

54 year old male patient came to emergency with breathlessness , alter-consciousness & oliguria (decrease urine output). On examination, his blood pressure. was 180/120 mmHg & heart rate iwas 110/min. On respiratory examination, patient has bilateral abnormal breath sound. Patient has pedal edema also. In history , it was found that patient is known case of diabetes mellitus with hypertension with renal function impairment. Doctor advised patient to admit in ICU.

	Reference Range
Haemoglobin	= 7.0 13.5 –15.5 gm %
WBC	= 5500 4000–11000/cmm
Serum Creatinine	= 7.0 0.4 – 1.2 mg%
RBS	= 150 <140 mg%
Serum Sodium	= 137 135 –145 mmol/L
Serum Potassium	= 6.2 3.5 – 5.0 mmol/L

	Reference Range
<u>Arterial Blood Gas Analysis</u>	
pH	= 7.2 7.35 – 7.45
pO ₂	= 95 90 – 100 mmHg
pCO ₂	= 18 32 – 44 mmHg
HCO ₃ ⁻	= 08 22 – 26 mmol/L

Physician started following treatment.

- Inj Furosemid (diuretics)
 Inj Nitroglycerin (vasodilator)
 Inj Insulin 12 unit + Inj 25% Dextrose saline Intravenously slowly
 Inj Sodium Bicarbonate 200 ml Intravenously slowly

After patient general condition improved, patient is shifted to ward. Doctor added following treatment
 Blood transfusion + Inj Erythropoietin subcutaneously once in month + Tab Calcium + Vitamin D3 once in day.
 With Oral Glycemic Drug & Anti-Hypertension

Give answer of following question .

- a) What can be biochemical reason of hyperkalemia (increase potassium) in this case ?
- b) What is interpretation of arterial blood gas analysis? explain biochemical reason for that
- c) What is role of calcium & vitamin-D in this case?
- d) Which other investigation are require for evaluation of renal function & to differentiate acute & chronic renal failure?
- e) What is role of Insulin+ 25% dextrose saline in this case?

Q:5 write justification (answer in few lines) (5 out of 7)

(10 marks)

- a) Premature baby tends to develop respiratory distress syndrome
- b) Unsaturated cis-fatty acids increase fluidity of membrane.
- c) Acarbose is used in treatment of diabetes mellitus.
- d) Patient of von-gierke's Disease can suffer from gouty arthritis
- e) TCA cycle is amphibolic in nature.
- f) Primaquine administration in G6PD deficient patient can precipitate hemolytic anaemia
- g) Vitamin-K injection should be given to new born baby, immediately after birth.

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

(05 marks)

- a) Difference between Keratan sulfate & Hyaluronic acid
- b) Difference between diabetes mellitus & diabetes insipidus
- c) Formation & significance of C-peptide
- d) Folate trap
- e) Give two clinical significant of lysozome & it's enzyme
- f) Make sequence of following as per it's unsaturated fatty acid concentration, in ascending order.
 - a. Sunflower oil, coconut oil , groundnut oil , cotton side oil