

**RAN-3704****Medical Faculty, 1st MBBS, Biochemistry Examination****March / April - 2019****Biochemistry Theory****Paper 1****સૂચના : / Instructions**

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.

Fill up strictly the details of signs on your answer book

Name of the Examination:

Medical Faculty, 1st MBBS, Biochemistry

Name of the Subject :

Biochemistry Theory

Subject Code No.:

3 7 0 4

Seat No.:

Student's Signature

Section 1**Q-1 Short notes (2 out of 3)****08 marks**

- Polyol pathway and it's significant in case of diabetes mellitus
- Metabolism of VLDL and LDL
- Iron- source, metabolism, RDA and clinical significance

Q-2 Describe in brief (4 out of 6)**12 marks**

- Digestion and absorption of lipid
- ELISA
- Eicosonoid and it's inhibitors
- Metabolic acidosis and alkalosis
- Fluid mosaic model of plasma membrane
- Glucose transporters

Q-3 Answer in one or two lines (5 out of 6)**05 marks**

- Equation for calculation of Body Mass Index
- Equation for calculation of LDL Cholesterol from Cholesterol, Triglyceride and HDL Cholesterol
- List substrates for gluconeogenesis
- List hormones and vitamins involved in Calcium metabolism
- HbA1C
- Hormone sensitive lipase

Section 2

Q-4 Clinical Case with 5 questions 10 marks

Recently, a town in India witnessed death of many children in span of few days. On investigation, it was found that parents of most such children were working as laborers in Litchi farms. Children ate large amount of unripe litchi fallen on ground, hypoglycin A (Amino-methylenecyclopropyl propanoic acid) present in litchi was responsible for the event. Hypoglycin A is metabolised by body to methylenecyclopropyl acetyl-Co-A (MCPA-Co-A) and MCPA-carnitine. The metabolites inhibit fatty acid transport into mitochondria and its metabolism by Acyl-Co-A dehydrogenase. Inhibition of beta-oxidation leads to excess utilization of glucose in fasting state, leading to hypoglycemia. Hypoglycemic encephelopathy leads to death.

- Q.1 How fatty acids are transported in to mitochondria?
- Q.2 Explain reaction catalysed by Acyl-Co-A dehydrogenase.
- Q.3 Action potential transmission requires energy. Explain.
- Q.4 Hypoglycemia is more dangerous to brain as compared to other organs. Explain
- Q.5 Draw flow-chart explaining biochemical basis effects of Hypoglycin A on body.

Q-5 Answer in few lines(5 out of 7) 10 marks

- a) Premature baby tends to develop respiratory distress syndrome
- b) Hyperuricemia may be observed in von Gierke,s disease.
- c) Odd chain fatty acids are glucogenic.
- d) Hyperventilation aggravate tetany.
- e) Pregnant woman frequently suffers from anemia
- f) Saturated fatty acids decrease fluidity of membrane.
- g) Glucose helps Na⁺ absorption

Q-6 Answer in one or two lines (5 out of 6) 05 marks

- a) Keratan sulfate & Hyaluronic acid
- b) Biochemical changes in starvation
- c) List metabolic pathways operating in mitochondria
- d) Total parenteral nutrition
- e) Diabetes mellitus and diabetes insipidus
- f) Diagnostic criteria for diabetes mellitus