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RAN-1806000101030001

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## 1st Year M.B.B.S. Examination

## November / December - 2019

## Biochemistry

## Theory Examination : Paper - 1

**સૂચના : / Instructions**

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
**Fill up strictly the details of ☛ signs on your answer book**

Name of the Examination:

☛ 1st Year M.B.B.S.

Name of the Subject :

☛ Biochemistry Theory Examination : Paper - 1

Subject Code No.: 1806000101030001

Seat No.:

Student's Signature

### Section 1

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

a) Sorbitol in diabetes mellitus
b) Metabolism of HDL
c) Calcium - source, metabolism, RDA and clinical significance

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

a) Digestion and absorption of carbohydrate
b) ELISA
c) Prostaglandins
d) Respiratory acidosis
e) Fluid mosaic model of plasma membrane
f) Facilitated diffusion



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

a) Equation for calculation of Body Mass Index
b) Friedewald Equation for calculation of LDL Cholesterol
c) Specific reactions of Gluconeogenesis
d) Iron absorption
e) HbA1C
f) Lipolysis regulation in adipose tissue

## 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 mitochondia 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** What is role of carnitine in beta oxidation?
**Q.2** Inhibition of Acyl-Co-A dehydrogenase leads to ATP deficiency in cell. Explain
**Q.3** Why brain energy requirement is very high?
**Q.4** Hypoglycemia is more dangerous to brain as compared to other organs. Explain
**Q.5** Litchi poisoning causes hypoglycemic encephelopathy. Explain.

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

a) Premature baby tends to develop hyperbilirubinemia.
b) Hyperuricemia may be observed in cancer chemotherapy
c) Some fatty acids are glucogenic.
d) Cigarette smoking is injurious to health. Explain biochemically.
e) Pregnant woman require larger amount of iron in diet.
f) Unsaturated cis-fatty acids increase fluidity of membrane.
g) Glucose helps $Na^+$ re-absorption in renal tubules.



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

a) Tumor markers
b) Biochemical changes after taking food
c) RBC can not use glucose via aerobic glycolysis
d) Total parenteral nutrition
e) Fluoride is added as preservative in blood collected for plasma glucose estimation
f) Diagnostic criteria for diabetes mellitus

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