RUHS FIRST YEAR MBBS EXAMINATION

BIOCHEMISTRY- PAPER - I

August (Main) 2014 TIME: 3 HOURS TOTAL MARKS: 50

INSTRUCTIONS:

1. Que. No. 1 and 5 in section A and B are compulsory. Attempt ANY TWO questions from rest of the questions in each section.

2. Use separate answer sheet for each section.

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Section A

Q1. a) What is diabetes mellitus? Enumerate the cardinal symptoms of Diabetes and explain the biochemical basis of their occurrence.

b) What is competitive inhibition of enzymes? How does it affect the Km and Vmax ?

Give three therapeutic applications.

Q2. a) Trace the pathway of gluconeogenesis using Alanine as the substance. Mention the key enzyme of the pathway.

b) Describe the pathway of heme degradation and excretion. Add a note on the clinical conditions associated with heme degradation.

Q3. a) Glycosis in erythrocytes and its relation with tissue oxygenation

b) Cholesterol and its biological importance

Q4. Write short notes on

a) Inhibitors of E. T. C. vs uncouples

b) Diagnostic use of enzymes

c) Folate Trap

d) Calcitriol and its biochemical functions.

SECTION B

Q5. a) Describe the steps of Beta-Oxidation proper inside the mitochondria. How does beta oxidation of saturated and unsaturated fatty acids differ in terms of energetics?

b) Describe sources RDA, Biochemical functions and deficiency manifestations of ascorbic acid.

Q6. a) Watson & Crick model of DNA

b) Detoxification of Ammonia & its Regulation

Q7. Write very short notes on

a) Haemoglobin variants

b) Protein energy Mainutrition

C) Primary gout

d) Ketosis

a) Four coenzyme forms of water soluble vitamins

b) Four Lipotropic factors

c) Four functions of glutathione

d) Four inborn errors of Metabolism of aromatic amino acids