FACULTY OF MEDICINE, UNIVERSITY OF RUHUNA

Second Examination for Medical Degrees - July / August 2003

BIOCHEMISTRY PAPER II

Monday 28th July 2003 **2.00 p.m. – 5.00 p.m.**

Answer All Six Questions **(3 hours)**

Marks allocated to each part of a question is shown within parenthesis.

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1. 1.1 Describe the role of liver in lipoprotein metabolism. (*60 marks*)

   1.2 State the rate limiting step in cholesterol biosynthesis and describe how it is regulated. (*20 marks*)

   1.3 What dietary advice should be given to an obese adult with hypercholesterolaemia to normalize his blood cholesterol? (*20 marks*)

2. Explain giving the biochemical basis.

   2.1 Fatty stools and fatty liver are seen in kwashiorkor. (*25 marks*)

   2.2 Transient hypokalaemia and hypophosphataemia is observed following insulin therapy in diabetes. (*25 marks*)

   2.3 Hyperuricaemia seen in glucose 6-phosphatase deficiency. (*25 marks*)

   2.4 Reduction in haptoglobin level seen in haemolytic anaemia. (*25 marks*)

3. State the clinical condition in which each of the following biochemical tests is indicated.

   Explain the biochemical basis for each test.

   3.1 Serum alkaline phosphatase. (*25 marks*)

   3.2 Plasma phenylalanine. (*25 marks*)

   3.3 Percentage transferrin saturation. (*25 marks*)

   3.4 Creatine phosphokinase MB-isoenzyme. (*25 marks*)

4. Comment on the following statements.

   4.1 Receptors are of central importance for the action of hormones at cellular level. (*50 marks*)

   4.2 Competitive inhibitors of enzymes are used as therapeutic agents .(*50 marks*)

Contd....2

5. 5.1 Explain the role of following on amino acid metabolism.

5.1.1 L-Glutamate dehydrogenase. (*25 marks*)

5.1.2 Glutaminase. (*25 marks*)

5.2 Explain the effects of the following on protein metabolism.

5.2.1 Rifampicin. (*25 marks*)

5.2.2. Erythromycin. (*25 marks*)

6. Give reasons to justify the following.

6.1 Breast fed infants are less likely to develop severe diarrhoea when compared to bottle fed infants. (*25 marks*)

6.2 Germination of pulses improves the nutritive value. (*25 marks*)

6.3 Bioavailability of iron in food of animal origin is better than in food of plant origin (*25 marks*)

6.4 Ascorbic acid deficiency leads to bleeding gums. (*25 marks*)

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