

UNIVERSITY OF JAFFNA, SRI LANKA
FIRST EXAMINATION FOR MEDICAL DEGREES –JANUARY 2012



BIOCHEMISTRY PAPER II

Date: 31.01.2012

Time: 3 Hours

Answer all TEN questions

Answer Part A and Part B in separate answer books

PART A

1. 1.1 Explain the energy expenditure by a person during
1.1.1 100 meter sprint (30 Marks)
1.1.2 Marathon race (30 Marks)
- 1.2 Explain why the energy production by the oxidation of NADH (40 Marks)
is more than that from FADH₂ oxidation.
2. 2.1 Explain how chronic alcoholics may get fatty liver. (30 Marks)
2.2 Draw the lipid profile of an alcoholic who has fatty liver. (30 Marks)
2.3 Give reasons for the changes in the lipoprotein fractions (40 Marks)
shown in section 2.2
3. 3.1 A patient treated with chloroquine and primaquine developed
jaundice.
3.1.1 Give reasons for the development of jaundice. (40 Marks)
3.1.2 Give the tests to be carried out in serum and urine to (40 Marks)
confirm the type of jaundice.
- 3.2 Explain how iron circulated in the blood is taken-up by the (20 Marks)
cells.
4. 4.1 Which parameters should be measured in a person to confirm (30 Marks)
that he is having hyperthyroidism?
4.2 Give the biochemical basis for the increased appetite and loss (45 Marks)
of weight in a hyperthyroid patient.
4.3 Explain how the pseudocholine esterase is inhibited by (25 Marks)
organophosphates?
5. 5.1 Write short notes on
5.1.1 Eicosanoids in reproductive system (30 Marks)
5.1.2 Maple syrup urine (20 Marks)
5.1.3 Phenylketonuria (50 Marks)
6. 6.1 Differentiate between kwashiorkor and marasmus. (50 Marks)
6.2 Discuss the nutritional requirements of a diabetic patient and (50 Marks)
prepare a day's menu, which would provide 1800 kilocalories.

PART B

7. 7.1 Explain briefly with schematic diagram, how “Flow of genetic information” takes place. (50 Marks)
- 7.2 Explain the biochemical basis for the use of neostigmine in the treatment of myasthenia gravis. (50 Marks)
8. 8.1 Write short notes on pre diabetic autoimmunity and type 1 diabetes. (40 Marks)
- 8.2 Comment on the quality of proteins from egg, fish, legumes and rice. (60 Marks)
9. 9.1 A 50 year old man who underwent partial gastrectomy developed anemia and later developed neurological disorders. Explain. (70 Marks)
- 9.2 Explain how HGPRTase deficiency causes hyperuricemia. (30 Marks)
10. 10.1 Show how glucose-sodium co-transport takes place in intestine. (30 Marks)
- 10.2 Write short notes on numerical alterations in chromosomal anomalies. (40 Marks)
- 10.3 List the functions of glycosaminoglycans. (30 Marks)