



UNIVERSITY OF JAFFNA, SRI LANKA
FIRST YEAR FIRST SEMESTER EXAMINATION IN BPHARMHONS - 2021

PHABP 1153 – BIOCHEMISTRY FOR PHARMACY I
(14TH BATCH)

PAPER II

19.12.2022

Time: 2 Hours

Answer All Six Questions.

Answer Each Question in Separate Answer Books.

1. 1.1 Explain how structurally collagen differs from elastin. (30 Marks)
- 1.2 Give the basic principle of electrophoresis. (25 Marks)
- 1.3 Explain how the pI values are useful in the separation of proteins by electrophoresis. (15 Marks)
- 1.4 Name the test that is useful to differentiate aromatic amino acids from aliphatic amino acids? (10 Marks)
- 1.5 Explain the terms 'salting out' and 'salting in'. (20 Marks)

2. 2.1 Give the biochemical basis of physiological jaundice in a new born. (20 Marks)
- 2.2 Give the expected changes in the above new born on
 - 2.2.1 different fractions of bilirubin in blood. (15 Marks)
 - 2.2.2 bilirubin and urobilinogen in urine. (15 Marks)
 - 2.2.3 bile salt in urine. (10 Marks)
- 2.3 Give the names of the biochemical tests for
 - 2.3.1 different fractions of bilirubin in blood. (10 Marks)
 - 2.3.2 bilirubin in urine. (10 Marks)
 - 2.3.3 urobilinogen in urine. (10 Marks)
 - 2.3.4 bile salt in urine. (10 Marks)

3. 3.1 A 30-year old woman from Nuwara Eliya district had the plasma T_4 level of 40nmol/L (normal 65-130nmol/L). She was a strict vegetarian and consumed only upcountry vegetables. Intake of iodized salt has improved plasma T_4 level. A survey carried out in that particular area revealed that many of the residents had lower plasma T_4 level.
- 3.1.1 What could be the probable condition in the female mentioned above?
(10 Marks)
- 3.1.2 Explain with the help of a labelled diagram, how the intake of iodized salt improved her condition.
(35 Marks)
- 3.2 3.2.1 List four dietary sources of iron.
(10 Marks)
- 3.2.2 Diagrammatically show how the dietary iron is absorbed.
(25 Marks)
- 3.3 Explain how the pancreatic insufficiency causes steatorrhoea.
(20 Marks)
4. 4.1 Explain the biochemical basis of treating myasthenia gravis patients with neostigmine.
(25 Marks)
- 4.2 How do the constituents of Oral Rehydration Salt (ORS) benefit diarrhoeal patients?
(25 Marks)
- 4.3 Even though the NADH is not transported through the inner mitochondrial membrane, the NADH formed in the cytoplasm is oxidized in the mitochondria. Explain.
(25 Marks)
- 4.4 Give the structure of an immunoglobulin and explain how the structure suits for its function.
(25 Marks)
5. 5.1 Give three dietary sources of folic acid?
(10 Marks)
- 5.2 How does folic acid deficiency lead to megaloblastic anaemia?
(40 Marks)
- 5.3 Explain the biochemical basis of treating leukaemia patients with folic acid antagonists.
(10 Marks)
- 5.4 Explain how a deficiency of vitamin K prolongs the blood clotting time.
(40 Marks)

6. 6.1 Write short notes on the biochemical basis of classifying human blood groups. (25 Marks)
- 6.2 Heparin is more polar than heparin sulphate. Explain. (20 Marks)
- 6.2 Explain the functions of phospholipids. (20 Marks)
- 6.3 Explain why fatty acid salts are used as detergents and not the free fatty acids. (15 Marks)
- 6.4 List the functions of cholesterol in human body. (20 Marks)