UNIVERSITY OF JAFFNA, SRI LANKA

FACULTY OF ALLIED HEALTH SCIENCES

FIRST YEAR FIRST SEMESTER EXAMINATION IN BPharmHons-2022

PHABP1153 BIOCHEMISTRY FOR PHARMACY I

PAPER II

Date: 07.12.2023 **Time: 2 Hours**

Answer all the six questions.

Answer Each Part in Separate Answer Books.

PART A

1. 1.1 Explain how haemoglobin buffer system acts. **(20 Marks)**

   1.2 Give the biochemical basis of classifying the blood group antigens. **(40 Marks)**

   1.3 **1.3.1** List the essential fatty acids. **(10 Marks)**

   1.3.2 Explain with examples, why certain fatty acids are called as **conditionally essential fatty acids**? **(30 Marks)**

2. 2.1 **2.1.1** List the sites of distribution of collagen in human body. **(20 Marks)**

   2.1.2 Briefly describe the process collagen synthesis and the posttranslational modification. **(40 Marks)**

   2.1.3 Briefly explain biochemical basis of two clinical conditions that are associated with collagen synthesis. **(20 Marks)**

   2.2 Classify the different membrane transport mechanisms with examples that are involved with ions, monosaccharides and amino acids. **(20 Marks)**

PART B

3. 3.1 3.1.1 Briefly explain how vitamin D is synthesised and converted to its biochemically active form. **(30 Marks)**

3.1.2 Explain how the biochemically active form of vitamin D helps in calcium homeostasis. **(40 Marks)**

3.2 Explain the biochemical basis of vitamin K in blood clotting. **(30 Marks)**

4. 4.1 4.1.1 List the probable causes of obstructive jaundice? **(15 Marks)**

4.1.2 Explain the biochemical findings that you would observe in the serum, urine and faces of a patient with obstructive jaundice. **(45 Marks)**

4.2 Briefly explain the biochemical basis of neonatal jaundice. **(20 Marks)**

4.3 Write short notes on Thalassemia. **(20 Marks)**

5. 5.1 5.1.1 Explain with a diagram how thyroid hormone is synthesised in thyroid follicular cells and released in to the circulation. **(45 Marks)**

5.1.2 Explain how thyroid hormone transported in the blood and converted to its active form in the target cells. **(35 Marks)**

5.2 List the biochemical findings that are observed in a patient with iron deficiency. **(20 Marks)**

6. 6.1 Explain how dietary carbohydrates are digested and absorbed. **(35 Marks)**

6.2 Explain why the ATP production by oxidation of NADH is more than that of $FADH_2$? **(30 Marks)**

6.3 6.3.1 List the different immunoglobulins. **(10 Marks)**

6.3.2 Draw the structure of an immunoglobulin. **(25 Marks)**