UNIVERSITY OF JAFFNA, SRI LANKA

FIRST YEAR SECOND SEMESTER EXAMINATION IN BPharmHons - 2023

PHABP 1222 –BIOCHEMISTRY FOR PHARMACY- II

(14TH BATCH)

PAPER II

Date: 23 JUN 2025 Time: 2 Hours

ANSWER ALL SIX QUESTIONS ON SEPARATE ANSWER BOOK.

1. **1.1** List the three main different types of diabetes mellitus. **(15 Marks)**

   1.2 Give reasons for the occurrence of the above types of diabetes mellitus. **(30 Marks)**

   1.3 List four possible tests that could be carried out in blood to confirm that an individual is diabetic. **(20 Marks)**

   1.4 Give the expected aimed cut off values of blood glucose level of a diabetic patient that could be obtained in the test mentioned in Section 1.3. **(20 Marks)**

   1.5 Give the principle of the method that is used to measure the blood glucose level. **(15 Marks)**

2. **2.1** Explain with a diagram how the fats absorbed into the enterocytes are

   2.1.1 incorporated into chylomicron in the enterocytes. **(25 Marks)**

   2.1.2 distributed to different organs in the body by chylomicron. **(25 Marks)**

   2.2 What is the normal range of blood LDL to HDL ratio. **(10 Marks)**

   2.3 **2.3.1** Diagrammatically show the lipid profile of a normal person and that of a hypercholesterolemic patient. **(20 Marks)**

   2.3.2 Give reasons for the changes in the lipid profile in a diabetic patient. **(20 Marks)**

3. 3.1 3.1.1 List the conditions that can lead to increased blood ammonia level. **(10 Marks)**

3.1.2 Write down the reactions and the respective organ/s in which the detoxification of ammonia is taking place. **(40 Marks)**

3.2 3.2.1 List two transaminases that are useful to confirm myocardial infarction and liver diseases. **(10 Marks)**

3.2.2 Diagrammatically show the steps catalysed by the above-mentioned enzymes with their cofactors. **(30 Marks)**

3.2.3 Give the principles of the estimation of one of the above-mentioned transaminases in the laboratory. **(10 Marks)**

4. 4.1 4.1.1 Name the enzyme that is defective in Lesch Nyhan syndrome. **(05 Marks)**

4.1.2 Diagrammatically show the reaction catalysed by the enzyme mentioned in **4.1.1.** **(15 Marks)**

4.2 4.2.1 List the proteins and enzymes that are involved in replication of the flow of genetic information in a eukaryotic cell. **(30 Marks)**

4.2.2 Explain the steps involved in the replication with a diagram and describe the functions of the above-mentioned proteins and enzymes in replication. **(50 Marks)**

5. 5.1 Explain why the following nutrients requirement of a pregnant woman is more than that of a non-pregnant woman of the same age.

5.1.1 Energy **(20 Marks)**

5.1.2 Protein **(20 Marks)**

5.2 For a well-nourished lactating mother for the first six months no additional energy is required. Explain. **(20 Marks)**

5.3 Explain 'supplementary action of proteins' with three examples. **(25 Marks)**

5.4 Explain 'Specific dynamic action'. **(15 Marks)**

6. **6.1** Give the importance of feeding an infant with colostrum. **(25 Marks)**

6.2 List the advantages of feeding a baby with human milk over the cow milk. **(25 Marks)**

6.3 Explain the advantages of including the fibres in the diet. **(25 Marks)**

6.4 Suggest five fibre rich dietary sources. **(25 Marks)**