UNIVERSITY OF JAFFNA, SRI LANKA

FIRST YEAR SECOND SEMESTER EXAMINATION IN BPharmHons - 2022

PHABP 1222 –BIOCHEMISTRY FOR PHARMACY- II

(15TH BATCH)

PAPER II

Date: 18.06.2024 **Time: 2 Hours**

Answer all 6 questions.

Marks allotted to each part are indicated in brackets.

Answer Each Question on Fresh Answer Sheet.

1. **1.1** Diagrammatically show how insulin is secreted by the pancreas when the blood glucose level is elevated. **(35 Marks)**

   1.2 Explain the biochemical basis of advising a diabetic patient to consume glipizide (a second generation of sulphonylurea). **(25 Marks)**

   1.3 Explain how elevated levels of plasma glucose of a diabetic patient can lead to cataract. **(30 Marks)**

2. **2.1** If a patient has elevated serum triacylglycerol and cholesterol levels, which fraction/s of the plasma lipoprotein/s would have elevated in the patient. **(10 Marks)**

   2.2 Diagrammatically show the metabolism/s of the lipoprotein/s which is/are mentioned in **Section 2.1.** **(60 Marks)**

   2.3 Give the biochemical basis of using Atorvastatin to reduce the blood cholesterol level. **(15 Marks)**

   2.4 Explain how HDL_2 is converted to HDL_1. **(15 Marks)**

3. **3.1** List the conditions which can cause the increase in blood urea level. **(15 Marks)**

3.2 List and explain the metabolic pathways / steps which would lead to the detoxification of ammonia in the body. **(45 Marks)**

3.4 Neomycin is useful to treat the hepatic coma patients. Explain. **(20 Marks)**

3.5 Explain how the kidney helps in the maintenance of pH in ketosis. **(20 Marks)**

4. **4.1** Explain the biochemical basis of aggravation of hyperuricemia in chronic alcoholics. **(25 Marks)**

4.2 Give the biochemical basis of action of the following antibiotics.

4.2.1 Nalidixic acid **(15 Marks)**

4.2.2 Cycloheximide **(15 Marks)**

4.3 **4.3.1** What is xeroderma pigmentosum? **(10 Marks)**

4.3.2 Give the biochemical basis of xeroderma pigmentosum. **(20 Marks)**

4.4 How would the inclusion of aspirin to a patient with myocardial infarction would help to reduce future myocardial infarction. **(15 Marks)**

5. A male security guard of 40year old is having 65kg body weight and 1.8m height.

5.1 Calculate and comment on his BMI. **(20 Marks)**

5.2 Calculate his Basic Metabolic Rate (BMR). **(20 Marks)**

5.3 Calculate his Total Energy Expenditure (TEE) per day. **(20 Marks)**

5.4 To maintain zero energy balance, what proportion of energy should be obtained from carbohydrates, proteins and lipids and calculate the energy requirement from each of the macronutrient. **(40 Marks)**

6. **6.1** Briefly describe the importance of soluble fibres in diet. **(20 Marks)**

6.2 **6.2.1** Explain supplementary action. **(15 Marks)**

6.2.2 Give three sets of food combinations which can make good supplements. **(20 Marks)**

6.3 List the additional nutrient requirements of a lactating mother. **(20 Marks)**