

UNIVERSITY OF JAFFNA, SRI LANKA

FIRST YEAR SECOND SEMESTER EXAMINATION IN BPharmHons - 2022

PHABP 1222 –BIOCHEMISTRY FOR PHARMACY- II
(14TH BATCH)

PAPER II

Date: 18.06.2023

Time: 2 Hours

ANSWER ALL SIX QUESTIONS ON SEPARATE ANSWER BOOK.

1. An obese middle – aged man with diabetes developed cataract. His fasting blood sample was analysed, and the following results were obtained.

Plasma Biochemical	Results	Normal Range
Glucose (mg/L)	360	Expected to know
Total Cholesterol (mg/L)	340	200-239
Triacylglycerol (mg/L)	300	<150
Urea (mg/L)	40	7-20

- 1.1 List the hormones which would have brought the above changes in the blood parameters. (15 Marks)
- 1.2 Give reasons for the changes in the levels of
- 1.2.1 glucose (20 Marks)
- 1.2.2 total cholesterol (10 Marks)
- 1.2.3 triacylglycerol (10 Marks)
- 1.2.4 urea (15 Marks)
- 1.3 Explain how elevated levels of plasma glucose of a diabetic patient can lead to cataract. (30 Marks)

2. 2.1 List the probable enzyme/ cofactor defect/s causing phenylketonuria. (30 Marks)
- 2.2 Give the metabolic pathway of phenylalanine with the enzymes and the cofactors. (50 Marks)
- 2.3 How would phenyl pyruvic acid be detected in urine? (20 Marks)

3. 3.1 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)
- 3.2 Diagrammatically show the metabolism/s of the lipoprotein/s which is/are mentioned in Section 3.1. (60 Marks)
- 3.3 Diagrammatically show the electrophoretic patterns of the plasma lipoproteins of the patient mentioned in Section 2.1 and compare with that of a normal person. (30 Marks)
4. 4.1 Explain the biochemical basis of aggravation of gout in chronic alcoholics. (25 Marks)
- 4.2 Give the biochemical basis of action of the following antibiotics.
- 4.2.1 Streptomycin (15 Marks)
 - 4.2.2 Tetracycline (15 Marks)
 - 4.2.3 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)
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 macronutrients. (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)