



UNIVERSITY OF JAFFNA, SRI LANKA

FIRST YEAR SECOND SEMESTER EXAMINATION IN BPharmHons-2021

PHABP 1222-BIOCHEMISTRY FOR PHARMACY II

PAPER II

Date: 22.06.2023

Duration: 2 Hours

Answer all the Six Questions.

Answer each Part in Separate Answer Books.

PART A

1. 1.1 Explain how the Pyruvate Dehydrogenase (PDH) is controlled under fed and starving conditions (30 Marks)
- 1.2 Explain how the PDH step is bypassed in gluconeogenesis. (25 Marks)
- 1.3 List the three irreversible steps of citric acid cycle. (15 Marks)
- 1.4 Explain with a diagram how the glycogenolysis is controlled. (30 Marks)

2. 2.1 2.1.1 Name three different sources of blood ammonia. (10 Marks)
- 2.1.2 Explain how ammonia is detoxified in brain. (25 Marks)
- 2.1.3 Show diagrammatically how the amino nitrogen formed in the muscles is transported to the liver. (25 Marks)
- 2.2 A mother complained that her child was mentally retarded for the chronological age and was extremely irritable. The blood phenylalanine level was elevated, and the urine contained phenyl pyruvate.
- 2.2.1 Suggest the probable defect in the child. (10 Marks)
- 2.2.2 Explain the probable causes for the above said condition. (30 Marks)

3. 3.1 List the factors that influence the blood cholesterol level. (20 Marks)
- 3.2 List the different lipoproteins that transport cholesterol in the blood. (20 Marks)
- 3.3 Diagrammatically show how the cholesterol is transported from liver to extrahepatic tissues. (40 Marks)
- 3.4 Explain the biochemical basis of the reduction in blood cholesterol level by statin. (20 Marks)

PART B

4. 4.1 Diagrammatically show and explain the "flow of genetic information" (20 Marks)
- 4.2 Show the steps involved in DNA mismatch repair. (30 Marks)
- 4.3 Explain missense mutation taking the mutations in haemoglobin as examples. (50 Marks)

PART C

5. A 40-year old sedentary man weighing 90kg with the height of 160cm maintains his body weight by consuming 50g of mixed protein and the estimated energy requirement is 2000 kcal/day.
- 5.1 Calculate and comment on his BMI. (20 Marks)
- 5.2 Suggest the life style modification to correct his BMI. (25 Marks)
- 5.3 How many grams of carbohydrate and fat should he consume to maintain the modified body weight steadily? (35 Marks)
- 5.4 Comment on his nitrogen equilibrium, if he continues to consume 50g of mixed diet along with the suggested amounts of carbohydrates and lipids mentioned in 5.3. (20 Marks)



PART D

- 6.1 6.1.1 Explain how von Gierke's disease causes hyperuricaemia. (30 Marks)
- 6.1.2 Allopurinol is used to treat gouty patients. Explain. (25 Marks)
- 6.2 6.2.1 List 5 proteins present in egg white? (20 Marks)
- 6.2.2 Give the advantages and disadvantages of consuming egg daily. (25 Marks)