

UNIVERSITY OF JAFFNA, SRI LANKA
FACULTY OF ALLIED HEALTH SCIENCES
FIRST YEAR FIRST SEMESTER EXAMINATION IN BScHons (MLS) -2023

MLSBM 1163 –BIOCHEMISTRY FOR MEDICAL LABORATORY SCIENCES- I

PAPER II

Date: 16.12.2024

Time: 2 Hours

ANSWER ALL SIX QUESTIONS ON SEPARATE ANSWER BOOK.

1. Write short notes on
 - 1.1 posttranslational modification of collagen. (30 Marks)
 - 1.2 principle of electrophoresis. (15 Marks)
 - 1.3 isoelectric pH of amino acids. (15 Marks)
 - 1.4 salting in and salting out. (20 Marks)
 - 1.5 structure of a hair. (20 Marks)

2. Explain how the
 - 2.1 dietary starch is digested in different parts of the gastro intestinal system. (40 Marks)
 - 2.2 glucose is absorbed in the enterocytes and enters the skeletal muscle.(30 Marks)
 - 2.3 iron is absorbed into the intestinal mucosa. (30 Marks)

3.
 - 3.1 List the different enzymes and proteins that are involved with DNA replication and their respective functions. (25 Marks)
 - 3.2 Write short notes on cholesterol. (20 Marks)
 - 3.3 Explain how cells self-regulate energy production. (25 Marks)
 - 3.4 Expalin the basis of the classification of blood group antigens. (30 Marks)

4. 4.1 'Neonatal physiological jaundice', Explain. (10 Marks)
- 4.2 List the probable causes of neonatal physiological jaundice. (25 Marks)
- 4.3 Explain with reasons the biochemical changes that you expect in the serum, urine and the faeces of the infants affected by neonatal jaundice patients. (30 Marks)
- 4.4 Name the tests that could be carried out with serum and urine to confirm the condition. (12 Marks)
- 4.5 Give the principle of the test that would be carried out in the serum of the patient. (13 Marks)
- 4.6 Name the treatment that is commonly practiced to treat the new born babies with the above condition? (10 Marks)
5. 5.1 Diagrammatically show and label the structure of an antibody. (40 Marks)
- 5.2 Diagrammatically show how the serum electrophoretic pattern of the plasma proteins of a nephrotic syndrome patient differs from that of a normal person. (20 Marks)
- 5.3 Explain the homeostasis of serum calcium. (40 Marks)
6. 6.1 Explain how the vitamin B₁₂ deficiency
- 6.1.1 is caused. (25 Marks)
- 6.1.2 causes anaemia. (25 Marks)
- 6.2 Glucokinase and hexokinase having different K_m values for glucose is beneficial to the body. Explain. (25 Marks)
- 6.3 Explain why the haemoglobin buffer system is highly efficient in maintaining the blood pH. (25 Marks)