



FACULTY OF ALLIED HEALTH SCIENCES, UNIVERSITY OF RUHUNA
Department of Medical Laboratory Science
Second End-Semester Examination – August 2022
MLS 1263 Metabolism and Regulatory Mechanisms – Theory II (SEQ)

Date: 19th August 2022

Time: 2.15 p.m. – 3.45 p.m.

Duration: 1 hr 30 min

Answer all questions

Index Number:

01. 1.1 Describe the significance of pentose phosphate pathway. (25 marks)
- 1.2 Explain the following.
- 1.2.1 Development of fatty liver in a chronic alcohol user (25 marks)
- 1.2.2 Brown adipose tissues promote thermogenesis (25 marks)
- 1.3 Explain the interrelationship of glucose metabolism and palmitate synthesis (25 marks)
02. Write short notes on the following
- 2.1 Urea cycle (25 marks)
- 2.2 DNA replication (25 marks)
- 2.3 Transcription process of protein biosynthesis (25 marks)
- 2.4 Post-translational modifications of polypeptides (25 marks)
03. 3.1 List **five** biological functions of thyroid hormones. (15 marks)
- 3.2 Briefly describe the following.
- 3.2.1 The process of intestinal absorption of non-heme iron. (25 marks)
- 3.2.2 The importance of copper in iron metabolism. (10 marks)
- 3.3 Explain the biochemical basis for the use of,
- 3.3.1 3'-azido-3'-deoxythymidine (AZT) in AIDS. (15 marks)
- 3.3.2 sulfa drugs in bacterial infections (15 marks)
- 3.4 3.4.1 State **three** enzyme defects that could lead to the occurrence of hyperuricemia. (09 marks)
- 3.4.2 What is the role of adenosine deaminase enzyme in nucleotide metabolism? (06 marks)
- 3.4.3 Name a disease condition that could occur due to the deficiency of adenosine deaminase enzyme. (05 marks)