

UNIVERSITY OF JAFFNA, SRI LANKA
FACULTY OF ALLIED HEALTH SCIENCES
SECOND YEAR SECOND SEMESTER EXAMINATION IN BScHons (MLS) - 2020
MLSHE 2225 HAEMATOLOGY II



PAPER II

Date: 16.01.2023

Time: 2 hours

Answer all Six Questions.

Answer Part A and B in Separate Answer Books.

Part A

1. Prothrombin Time (PT) and Activated Partial Thromboplastin Time (APTT) are routine tests used to analyze the coagulation state of a patient.
 - 1.1. Explain the principle of PT and APTT (40 Marks)
 - 1.2. Name the anticoagulant of choice and its ratio suitable for PT and APTT (15 Marks)
 - 1.3. Briefly explain the preanalytical errors that lead to erroneous results in PT and APTT (35 Marks)
 - 1.4. List three (3) medical conditions or diseases which shows elevated levels of both PT and APTT (10 Marks)

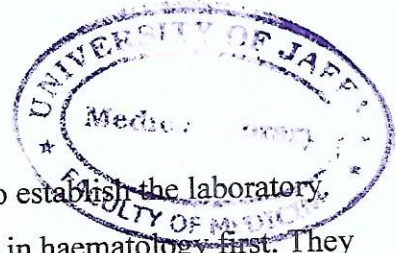
2. Hemostasis is the mechanism that leads to cessation of bleeding from a blood vessel.
 - 2.1. Explain the mechanism of action of platelet plug formation in hemostasis (50 Marks)
 - 2.2. Describe the coagulation cascades of normal hemostasis (50 Marks)

3. Write short note on
 - 3.1. Classification of von Willebrand disease (30 Marks)
 - 3.2. Mechanism of action of fibrinolytic system (30 Marks)
 - 3.3. PFA-100 system (40 Marks)

4. Leukemia is a type of haematological malignancy.
- 4.1. List **five (5)** characteristics of haematopoietic stem cells **(25 Marks)**
 - 4.2. Name the cells which are derived from myeloid progenitor cell **(25 Marks)**
 - 4.3. Define “Acute Myeloid Leukemia (AML)” **(20 Marks)**
 - 4.4. Describe the molecular basis of leukaemogenesis **(30 Marks)**

Part B

5. A patient suspected of haemolytic anaemia is admitted to a medical ward. They collected following samples from the patients and sent to the laboratory for testing.
An EDTA sample, a blood sample collected in to a plain tube and a urine sample
- 5.1. List **three (3)** preliminary tests which can be performed using EDTA sample which are helpful in the diagnosis of haemolytic anaemia and indicate expected salient findings in each in haemolytic anaemia **(25 Marks)**
 - 5.2. List **two (2)** preliminary tests which can be performed using the blood sample collected in to a plain tube which are helpful in the diagnosis of haemolytic anaemia and indicate expected salient findings in each in haemolytic anaemia **(15 Marks)**
 - 5.3. Briefly outline the basis for **two (2)** findings you mentioned in question 5.2 **(15 Marks)**
 - 5.4. List the **three (3)** tests which can be performed using a urine sample which are helpful in the diagnosis of haemolytic anaemia and indicate expected findings in each in haemolytic anaemia **(20 Marks)**
 - 5.5. State the confirmatory test and expected findings in beta thalassaemia major **(10 Marks)**
 - 5.6. Briefly outline how diagnosis is confirmed in hereditary spherocytosis **(15 Marks)**



6. In a newly constructed large hospital has allocated one floor to establish the laboratory. The management has planned establishing all the routine tests in haematology first. They have decided to have fully automated analyzers in haematology.

- 6.1. List the preliminary tests in haematology you would think most important for a large hospital (10 Marks)
- 6.2. Outline how quality should be managed in automated analyzers (40 Marks)
- 6.3. Briefly describe safety requirements of a haematology laboratory (30 Marks)
- 6.4. Briefly describe how to manage quality of technical team of a laboratory (20 Marks)