THE OPEN UNIVERSITY OF SRI LANKA
22 APR 2025
EXAMINATION DIVISION

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THE OPEN UNIVERSITY OF SRI LANKA

FACULTY OF HEALTH SCIENCES

DEPARTMENT OF MEDICAL LABORATORY SCIENCES

ACADEMIC YEAR 2024/2025 – SEMESTER I

BACHELOR OF MEDICAL LABORATORY SCIENCES (BMLS) HONOURS

MDU4501 – HAEMATOLOGY II

FINAL EXAMINATION DURATION: 03 HOURS

DATE:22nd APRIL 2025 TIME: 9.30 AM – 12.30 PM

Part B: Structured Essay Questions (40 marks)

Q1. Platelets are produced by megakaryocytes.

1.1. What is the primary mechanism behind the Glanzmann thrombasthenia? (1 mark)

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1.2 What is the platelet behavior in platelet function test in the following clinical conditions? (2 marks)

Glanzmann thrombasthenia

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Bernard-Soulier syndrome

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1.3 Briefly explain the pathophysiology of the primary thrombocythemia. (3 marks)

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1.4 State **two (02)** morphological features demonstrated in the blood picture and the bone marrow aspiration film of a patient with primary thrombocythemia. (4 marks)

Blood picture

i. .....

ii. .....

Bone marrow

i. .....

ii. .....

(Total 10 marks)

Q2. Anaemia occurs due to acquired or congenital/hereditary causes.

2.1. Briefly discuss the underline pathophysiology of hereditary spherocytosis. (2 marks)

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2.2. State the underline principle of acidified glycerol lysis test. (2 marks)

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2.3. List **two (02)** other screening tests and **two (02)** confirmatory tests to detect hereditary spherocytosis. (2 marks)

Screening tests

i. .....

ii. .....

Confirmatory tests

i. .....

ii. .....

2.4. What is alloimmune haemolytic anaemia? (2 marks)

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2.5. State **two (02)** clinical conditions caused by alloimmune haemolysis. (2 marks)

i. .....

ii. .....

(Total 10 marks)

Q3. Blood group antigens may be proteins, glycoproteins or glycolipids attached to the red cell membrane.

3.1 What is the genetic basis of Bombay phenotype in ABO grouping? (1 mark)

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3.2 List **two (02)** characteristic features of Bombay O blood group. (4 marks)

i. .....

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ii. .....

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3.3 List **two (02)** medico-legal uses of ABO system. (2 marks)

i. .....

ii. .....

3.4 Explain the differences between Weak D and Partial D in the Rh blood group system. (3 marks)

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(Total 10 marks)

Q4. The key feature of blood transfusion is to transfer correct blood components at correct time safely in sufficient amount.

4.1 List **four (04)** physical parameters of a male donor to be suitable for blood donation. (2 marks)

i. .....

ii. .....

iii. .....

iv. .....

4.2 Define the following terms. (4 marks)

a) Pre-operative autologous donation

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b) Selected donation

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4.3 State **two (02)** methods of leucodepletion. (2 marks)

i. .....

ii. .....

4.4 State **two (02)** indications of each of the following blood components. (2 marks)

a) Fresh frozen plasma

i. .....

ii. .....

b) Irradiated blood products

i. .....

ii. .....

(Total 10 marks)

Part C: Essay Questions (30 marks)

Answer the question in the booklet provided.

Q1. Write short notes on, (Total 15 marks)

i. Quality control in the Transfusion Transmitted Infections (TTI) laboratory of a blood bank. (09 marks)

ii. Citrate toxicity associated with blood transfusion. (06 marks)

Q2. Discuss **three (03)** different test methods for ABO and Rh grouping. (Total 15 marks)

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