

**BACHELOR OF MEDICAL LABORATORY SCIENCES (BMLS) HONOURS
MDU5401 – ADVANCED HAEMATOLOGY
FINAL EXAMINATION**

Part B: Structured Essay Questions (40 marks)

Question 01

A Full Blood Count (FBC) report of a 20-year-old female patient showed to have an extremely high White Blood Cell (WBC) count. All other cell counts and blood cell parameters appear normal.

- 1.1 Write two (02) precautions you would take before issuing the report. (02 marks)

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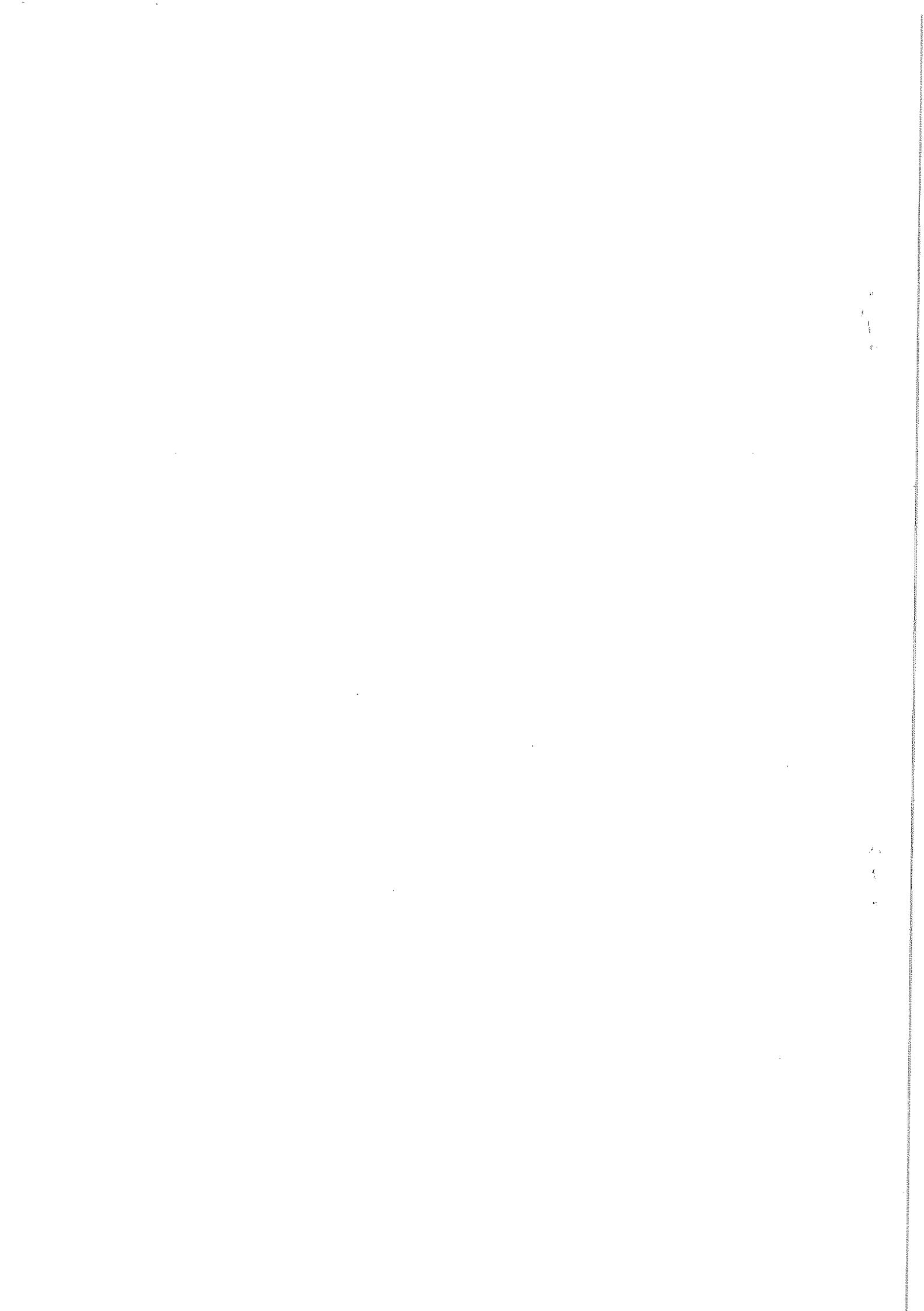
- 1.2 State one (01) technical error which can give the above result. (02 marks)

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- 1.3 State the mechanism used by a haematology analyzer to calculate the WBC count. (02 marks)

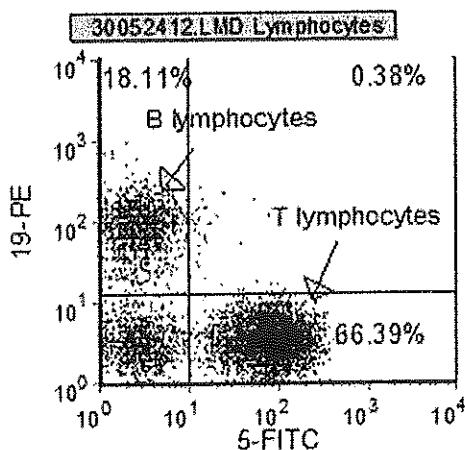
1.4 Briefly explain the principle of the mechanism mentioned in (1.3) above. (04 marks)

- 1.4 Briefly explain the principle of the mechanism mentioned in (1.3) above. (04 marks)



Question 02

The image given below is of a flow cytometry dot plot obtained using two markers, CD19 and CD5.



2.1 Name one (01) type of sample that can be used for flow cytometry? (01 marks)

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2.4 What are denoted by PE in the y-axis and FITC in the x-axis of the above dot plot? (02 marks)

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2.3 Name three (03) components of a flow cytometer. (03 marks)

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2.4 State the immunophenotyping of the B lymphocytes and T lymphocytes with respect to the CD markers? (04 marks)

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Question 03

3.1 Name two (02) properties of pluripotent stem cells. (01 marks)

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3.2 Name the three (03) types of pluripotent stem cells. (03 marks)

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3.3 Briefly explain the process of obtaining peripheral blood stem cells from a donor. (03 marks)

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3.4 Outline the process of engraftment. (03 marks)

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Question 04

4.1 Define the term “reference range”. (02 marks)

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4.2 How would you calculate the reference range for a skewed data set? (03 marks)

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4.3 Name two (02) inherent factors which can influence the reference range. (02 marks)

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4.4 Briefly explain how you would collect specimens for reference range calculations. (03 marks)

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Part C: Essay Questions (30 marks)

Question 01

Write a brief account of Von Willebrand's disease including the laboratory diagnosis. (15 marks)

Question 02

Write a brief account on interpreting the red cell histogram of a haematology analyzer report.
Illustrate using diagrams where necessary. (15 marks)

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