

Candidate Reg Number.....



*“Investing in Africa’s future”*

**COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES  
DEPARTMENT OF BIOMEDICAL AND LABORATORY SCIENCES  
BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS DEGREE  
NSLS 203 HAEMATOLOGY I PRACTICAL**

**END OF SEMESTER EXAMINATIONS**

**NOVEMBER 2025**

**LECTURER: PROF. E. OBEAGU**

**DURATION: 3 HOURS**

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***INSTRUCTIONS***

**1. Do not write your name on the answer sheet**

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**2. Use Answer Sheets Provided**

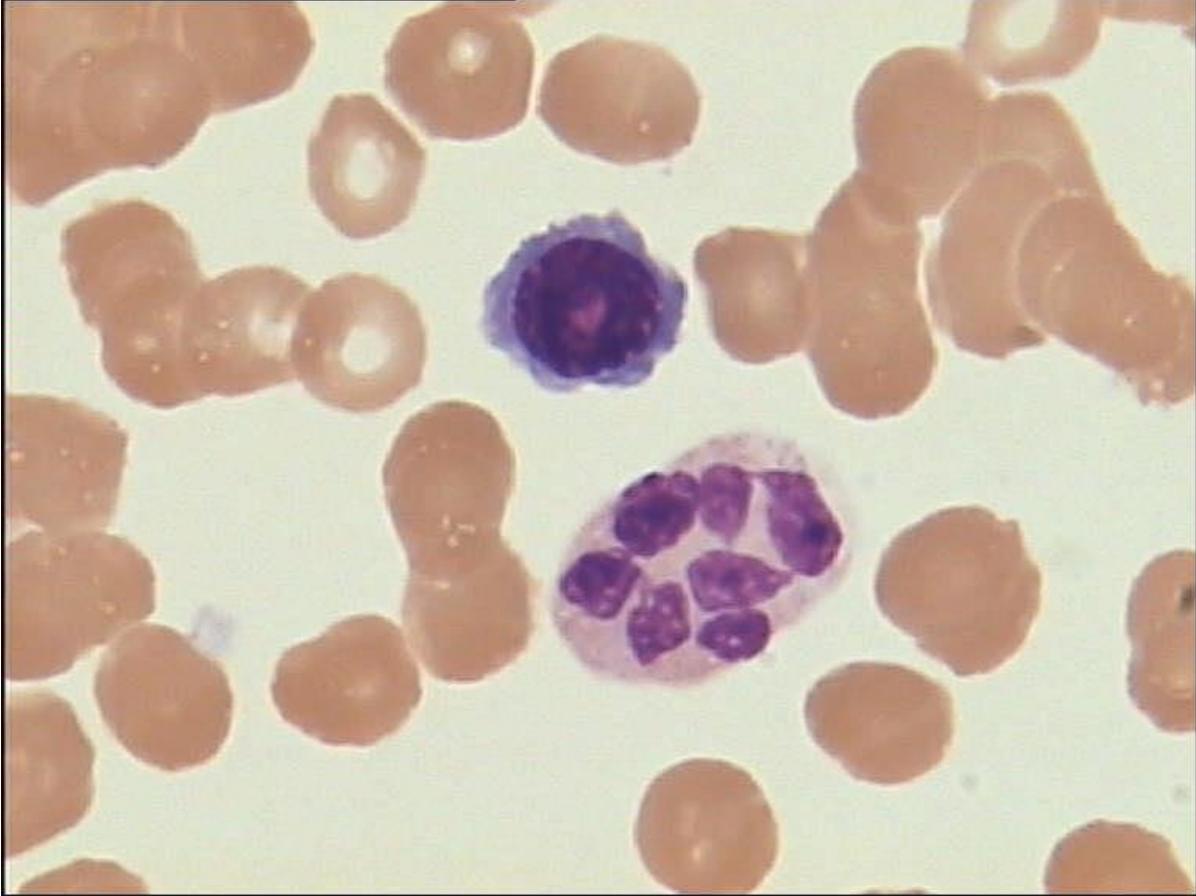
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**3. Answer all questions in Section A and B**

**SECTION A SPOT QUESTIONS**

1. Identify the blood cells with a nucleus in the peripheral blood smear labeled **Fig 1** and comment on the smear (5 marks)
2. In which scenario/s can we have increased number of those white blood cells in the peripheral blood smear labeled **Fig 1 (6 marks)**
3. Using about 3 to 4 words, or not more than two sentences, comment on the peripheral blood film labeled **Fig 2**. Note: don't do the differential count (**6marks**)
4. Identify the equipment labeled **Fig 3** and state its use in hematology (**4marks**)
5. What is the instrument labeled **Fig 4** and what is it used for in hematology (**4marks**)

**Fig 1.**



**Fig 2.**

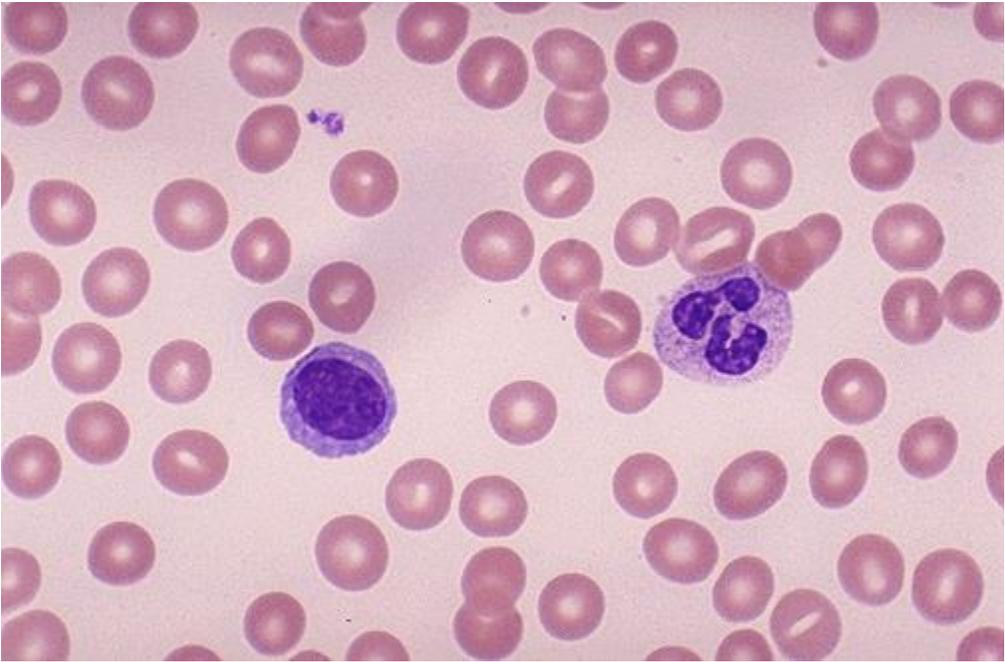
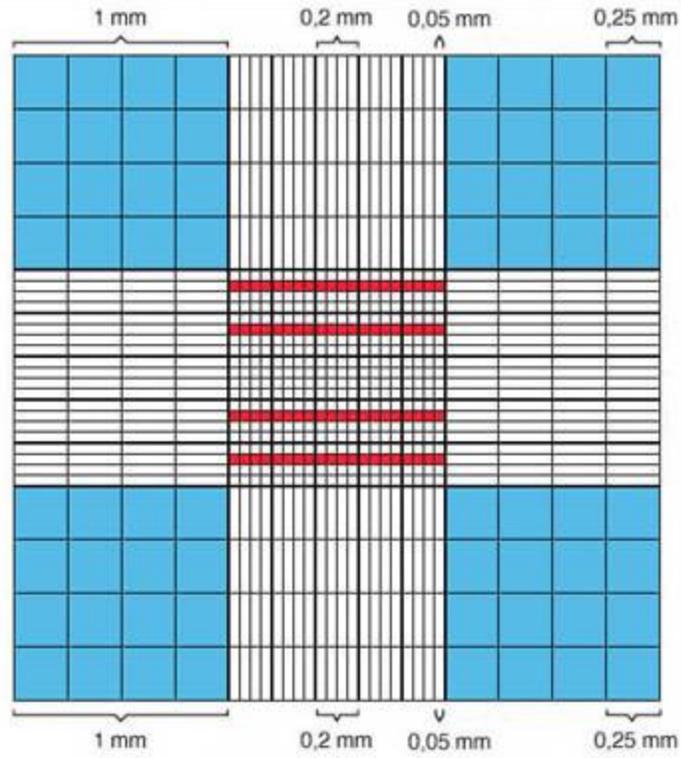


Fig 3.



With the aid of the diagram below indicate the squares in which white cells are counted

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Fig 4.



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**Procedure for the question**

1. Prewarm reagents and patient sample specimens to 37°C prior to performing this test.
2. Pipette 100ul of Citrated plasma into a labeled 12X75mm test tube.
3. Add 100ul of R1 to the test tube.
4. Mix and incubate for five minutes at 37°C.
5. Add 100ul of R2 to the test tube.
6. On addition of R2 start stop watch simultaneously.
7. Mix and determine coagulation time by tilting tube back and forth ( checking for clot formation)
8. Stop stopwatch as soon as clot forms
9. Record and report results.

**Question 6**

- a. Using the method provided demonstrate using the explained coagulation cascade the formation fibrin clot then answer the following questions **(10)**
- b. State the principle of this test and which coagulation pathway is measured **(5)**
- c. State and discuss the results obtained using this method **(10)**

**SECTION B**

**Question 1**

You are provided with a sample labelled P and you are required to carry out Antibody Screen on the sample. Suggest any further tests. [25 marks]

**Procedure name: Antibody Screen / detection method**

1. Label 3 tubes SI, SII and Acc
2. Put 2 drops of patient's serum in each of the tubes in step 1 above.
3. Add 1 drop of 2-5 % red blood cell suspension as follows:

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- a. Screen cells SI into tube labelled SI
- b. Screen cells SII into tube labelled SII
- c. Patient / donor own cells into tube labelled Acc
4. Centrifuge at 3000 rpm for 15 seconds, check for haemolysis /agglutination. Record results in *Table 1*
5. If negative in step 4 above, add 2 drops of LISS
6. Incubate for 15 minutes at 37° C
7. Centrifuge at 3000 rpm for 15 seconds, check for haemolysis/agglutination. Record results in *Table 1*. Proceed to step 8 if results are negative in step 7.
8. Wash the cells three times with normal saline
9. Add 2 drops of polyspecific AHG serum to washed cells
10. Centrifuge at 3000 revolutions per minute (pm) for 15 seconds
11. Read and record your results in *Table 1*
12. If negative, add 1 drop of OSC to each tube
13. Centrifuge at 1 000 rpm for 30 seconds and read visually. Record results in *Table 1*

Patient / Sample	Acc				SI				SII				Antibod y screen test Result
	RT- IS	LIS S 37° C	AH G	OS C	RT -IS	LIS S 37° C	AH G	OS C	RT -IS	LIS S 37° C	AH G	OS C	

**Question 2**

Describe in detail how would you carry out transfusion reaction investigation, stating all the

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samples that will be required for the full process (25 marks)