AFRICA UNIVERSITY
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"Investing in Africa's Future"

COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES

DEPARTMENT OF BIOMEDICAL AND LABORATORY SCIENCES

NSLS203: HAEMATOLOGY PRACTICAL

END OF SEMESTER EXAMINATIONS

NOVEMBER 2023

LECTURER: MR S. BANHWA

DURATION: 3 HOURS

INSTRUCTIONS

1. Answer **all** questions on separate answer sheets provided.
2. Credit will be given for logical, systematic and neat presentations

Question 1

a) Using the slide making and staining procedure given below make a thin smear of the provided sample **X** and stain it with the given Romanowsky stain (10 marks)

b) List 5 types of Romanowsky stains. (5)

c) What are the different parts of the thin smear (6)

d) Which is the best area to conduct a differential count (2)

e) There are 5 types of blood smears. List the different types of blood smears (2)

f) Viewing the smear, give general comments on red cells, platelets and white cells (10)

Procedure for slide making

Thin smear

STEP ONE:

- Place clean glass slide on a flat surface
- Add one small drop of blood to one end

STEP TWO:

- Take another clean slide
- holding at an angle of about 45 deg
- touch the blood with one end of the slide so the blood runs along the edge of the slide by capillary action
- Push carefully along the length of the first slide to produce a thin smear of blood

STEP THREE:

- Make 2 smears, allow to air dry, and **label clearly with your candidate number**

STEP FOUR:

•Fix the thin film with methanol (100% or absolute) and let it dry completely before staining

Procedure for thin film staining

1. Fresh working Giemsa stain has been prepared for you
2. Place slides onto the staining rack and add the working Giemsa stain
3. Stain for 10minutes
4. Rinse slides with Giemsa buffer
5. Dry the slides upright in a rack.

Question 2

You are provided with sample **K** and you are required to perform the test indicated in the procedure below

Procedure for the question

1. Prewarm reagents and patient sample specimens to 37℃ prior to performing this test.
2. Pippet 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℃.
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.

Questions:

(a) Give the name of the test which you have performed and explain the principle of this test. Which coagulation pathway is being measured in your test? (10)

(b) State and discuss the results obtained using this method (15)

(c) Given that you conducted Prothrombin (PT) and Activated Partial Thromboplastin time(APTT) and the following results were obtained state whether intrinsic, extrinsic or common pathway is affected. P = prolonged, N= Normal (5)

test	PT	APTT	Pathway affected
i.	N	N	
ii.	P	N	
iii.	P	P	
iv.	N	P	

Question 3

Answer the questions on each of the displayed spots on stations 1 to 20