



# TECHNICAL UNIVERSITY OF MOMBASA

---

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

**UNIVERSITY EXAMINATION FOR:**

DEGREE IN MEDICAL LABORATORY SCIENCES

AML 4420 : MEDICAL LABORATORY PRACTICALS

END OF SEMESTER EXAMINATION

**SERIES:DECEMBER2016**

**TIME:3 HOURS**

**DATE:**Pick DateDec2016

## Instructions to Candidates

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of **SIX**Question(s). Attempt ALL questions.

---

## **Question 1 Microbiology (30 marks)**

The Tube labeled **M3** contains bacterium from a urine specimen.

- a) Identify the medium in M3 2 Marks
- b) Describe the reactions in M3 4 Marks
- c) Using the provided reagents attempt to identify the organism (s) 5 Marks

## **SPOTS**

### **Spot I**

- a) Identify the spot labeled **M1** 1 Mark
- b) Which part of M1 is used in the Widal test? 2marks
- c) Name the disease and bacteria which is investigated by the Widal test 2Marks

d) Name the alternative laboratory test 2 marks

**Spot II**

- a) Identify the spot labeled **M2** 2 Mark
- b) Using the provided reagents attempt to describe the organisms 8 Marks
- c) Name two media that can be used to culture M2 2 Marks

**Question 2 Clinical Chemistry (30 marks)**

1. (A) The samples “B”, “C”, “D” and E collected at 8.00am, 9.00am, 10.00am and 10.30am from patients. Sample B was a fasting sample while the other samples were collected after a dose of glucose had been given to the patient.

- (i) Outline the procedure for patient preparation for an OGTT (5 marks)
- (ii) Outline the procedure for conducting an OGTT (5 Marks)
- (iii) Using the attached table Plot the OGTT curve (3 marks)
- (iv) Give interpretations of your results (4 marks)

(B) Examine spots “III” and “IV” and answer the questions below:

**SPOT “III”**

- (i) Name the spot (2 marks)
- (ii) Give one use of the spot (2 marks)

**SPOT “IV”**

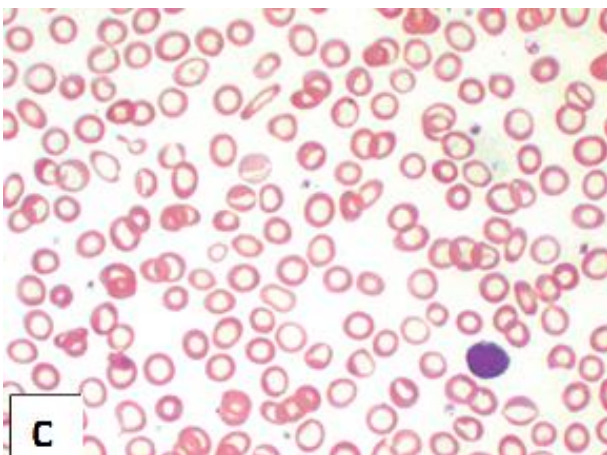
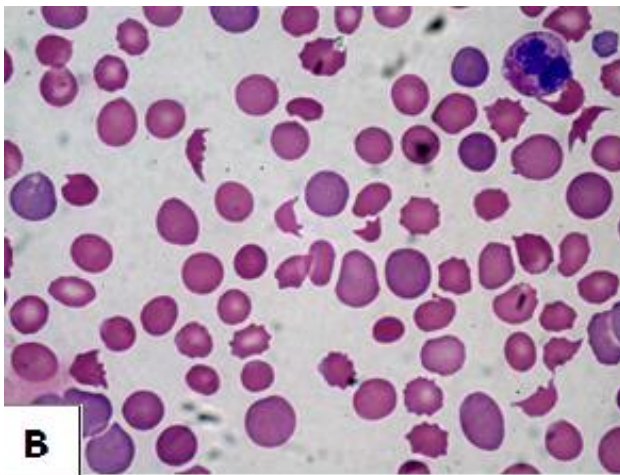
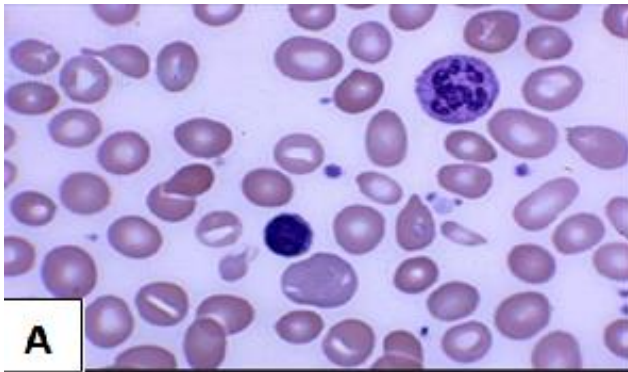
- (iii) Name the spot (2 marks)
- (iv) Give one use of the spot (2 marks)

**Question 3 Hematology (30 marks)**

The micrographs given show blood pictures for different types of Anaemia.

- A. Identify each type of Anaemia (6 marks)

B. Identify red cell abnormalities in each micrograph (18mks)



C. For each of the conditions, give two tests that would aid in differential diagnosis (6mks)

#### Question 4 Blood Transfusion (30 marks)

After a successful crossmatch and blood issue, patient X was reported to complain of severe headaches, lower back pain, subternal pain and pruritus during transfusion.

- a. What errors or omissions may have caused the patient to suffer these symptoms?  
(5mks)
- b. List 3 types of adverse effects that can be attributed to patient X.  
(6mks)

## SPOTS

### Spot V

- a) Describe the contents of spot V 4mks
- b) State reasons why it cannot be used in its current state 5 mks
- c) Discuss the indications/guidelines for use of the contents of spot V 10mks

## Question 5 Histology (30 marks)

1. You have been provided with a tissue section labelled H, using the reagents provided stain and give the results. (16 marks).
2. SPOTS

### SPOT VI

- i. Name spot VI (1 marks)
- ii. Name two functions of spot VI (3 marks)
- iii. Give two alternatives for spot VI (4 marks)

### SPOT VII

- i. Name spot VII (1 marks)
- ii. Name the function of spot VII (1 marks)
- iii. Outline the maintenance of spot VII (4 marks)

## Question 6 Parasitology (30 marks)

You are provided with blood specimen labelled P using the reagents and apparatus provided, process this sample.

Carry out an investigation and outline the procedure and interpret your findings.

(20marks)

### SPOT VIII

- i. Identify the spot (2.5 marks)
- ii. What is its use in the laboratory (2.5marks)

### SPOT VIII

Identify the spot

(2.5marks)

What is its use in the laboratory

(2.5marks)