



KIBABII UNIVERSITY

**MAIN CAMPUS
SUPPLEMENTARY/SPECIAL EXAMS**

2017/2018 ACADEMIC YEAR

**SECOND YEAR SECOND SEMESTER EXAMINATIONS
FOR THE DEGREE
OF
BACHELOR OF EDUCATION SCIENCE**

COURSE CODE: ESM 221

COURSE TITLE: BIOLOGICAL TECHNIQUES

DATE: 12th October, 2018 **TIME:** 8:00 -10:00 a.m.

INSTRUCTIONS TO CANDIDATES

Answer Question One **compulsory (30mks)** and any other Two Questions **(20mks)** each.

TIME: 2 Hours

KIBABII observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over. ►

ESM 221: BIOLOGICAL TECHNIQUES

QUESTION ONE (30MKS)

- i. Distinguish the following;
 - a). Progressive and retrogressive staining (5 marks)
 - b) Permanent slide and temporary slide (5 marks)
- ii. Water is never added to concentrated acid. Justify. (5 marks)
- iii. Briefly, describe how you would prepare a weight to weight solution using 5% of a chemical. (5 marks)
- iv. What are biological stains? State two types of stains giving examples in each case. (5 marks)
- v. Briefly explain five factors that affect tissue fixation. (5 marks)
- vi. Define a Mordant and explain its importance in histological studies? (5 marks)

QUESTION TWO

You have visited Lake Nakuru and the Indian Ocean to collect marine, bird and mammalian specimen. Describe how you would ensure that these specimens are well preserved. (20 marks).

QUESTION THREE

Discuss 'Microtomy' (20 marks)

QUESTION FOUR

Discuss the classification of simple fixative giving their strengths and weaknesses (20 marks)

QUESTION FIVE

Biological techniques are very useful in hospitals and biological research. Discuss (20 marks)