

BOWEN UNIVERSITY, IWO
COLLEGE OF AGRICULTURE, ENGINEERING AND SCIENCE
MICROBIOLOGY PROGRAMME
2021/2022 FIRST SEMESTER EXAMINATION

MCB 413: PHARMACEUTICAL MICROBIOLOGY
PRACTICAL

Answer ALL questions.

Time: 1hr

1. As a microbiologist, give a detailed description on the use of membrane filtration technique to analyze the bacterial quality of a syrup sample produced during batch production in a pharmaceutical industry (12 marks)

2. The plate labelled 'B' contains Mueller-Hinton agar (MHA) inoculated with bacteria isolated from the urethra of a patient infected with *Escherichia coli*. A multiple antibiotic disc was placed on the agar surface of the plate and incubated at 37°C for 24 hours.
 - a. Measure the zone(s) of susceptibility in millimeter (mm) (4marks)
 - b. Which antibiotic will you recommend to the physician and why? (5marks)
 - c. Suggest the possible Gram's stain reaction of the causative agent, *Escherichia coli* (4marks)

NOTE: antibiotic codes

CAZ: ceftazidime	(30µg)
CRX: cefuroxime	(30µg)
GEN: gentamicin	(10µg)
CTR: ceftriaxone	(30µg)
ERY: erythromycin	(5µg)
CXC: cloxacillin	(5µg)
OFL: ofloxacin	(5µg)
AUG: augmentin	(30µg)