



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE
IN MEDICAL BIOCHEMISTRY

SBC 875: ADVANCED LABORATORY TECHNIQUES

DATE: Monday, 20th November 2017

TIME: 2.00 p.m. - 5.00 p.m.

INSTRUCTIONS:

SECTION A: Answer all questions (5 mark each)

- 1) Describe the key features and operation of a freezing point osmometer and identify factors that affect its accuracy.
- 2) Explain the principle, advantages and applications of supercritical fluid chromatography.
- 3) Describe the Boron Neutron Capture Therapy (BNCT) method for treatment of tumours.
- 4) Describe the properties, electrode reactions and applications of the lechlanche cell.
- 5) Outline the general procedure of streptavidin assay and its advantages and disadvantages over conventional immunoenzyme methods.
- 6) Explain the quality assurance tests performed to validate the performance of spectrophotometer used in clinical diagnosis.
- 7) Describe cryoelectron microscopy and explain its effects on the antigenicity of surface molecules of a cell.
- 8) Describe the various types of detectors found in HPLC systems and their uses.

SECTION B: Answer any THREE questions (20 marks each)

- 1) Discuss the basic components, operation and clinical applications of mass spectrometer.
- 2) Discuss the uses of radioisotopes in medical imaging.
- 3) Discuss the localization of antigens to specific cell types or subcellular compartments using immunofluorescence assay.
- 4) Discuss the effects of urea on the colligative properties of water and their implication in the composition of body fluids.

INVOLVEMENT IN ANY EXAMINATION IRREGULARITY SHALL LEAD TO DISCONTINUATION