



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2020/2021
SECOND SEMESTER EXAMINATION FOR THE DEGREE OF
MASTER OF SCIENCE IN MEDICAL LABORATORY SCIENCE
HML 831: BACTERIAL SECRETION SYSTEMS

DATE: WEDNESDAY, 19TH MAY, 2021

TIME: 9.00 A.M. - 12.00 P.M.

INSTRUCTIONS:

Answer any THREE questions

1. (a) Illustrate diagrammatically the model of:
 - (i) Sec pathway (5 marks)
 - (ii) Tat pathway (5 marks)
- (b) Describe the process of protein secretion through the SecB and the SRP pathways. (20 marks)
2. Describe the role of type VII secretion systems (T7SS) in the *Mycobacterium tuberculosis*. (30 marks)
3. Discuss the role of type III secretion systems (T3SS) as a determinant of bacterial virulence. (30 marks)
4. (a) Illustrate diagrammatically the model of type II secretion system (T2SS). (10 marks)
- (b) Describe the mechanism of substrates translocation by type V secretion systems (T5SS) of gram positive bacteria. (20 marks)