



MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2013/2014

FOURTH YEAR FIRST SEMESTER EXAMINATIONS FOR THE
DEGREE OF BACHELOR OF SCIENCE IN PHARMACEUTICAL
SCIENCE, BACHELOR OF SCIENCE IN MEDICAL
BIOTECHNOLOGY AND BACHELOR OF SCIENCE IN MEDICAL
LABORATORY SCIENCE WITH INFORMATION TECHNOLOGY

(MAIN CAMPUS)

PMB 437: MOLECULAR ASPECTS OF INFECTIOUS AGENTS

Date: 29th November, 2013

Time: 11.00 a.m. - 1.00 p.m.

PMB 437: MOLECULAR^R ASPECTS OF INFECTIOUS AGENTS

SECTION I : Answer ALL Questions (40 marks)

1. Define prions and briefly explain how they cause disease (2 marks)
2. Differentiate between viruses and viroids (3 marks)
3. List the various ways by which viruses may damage host cells (5 marks)
4. What mechanisms are used by bacteria to evade host defenses (5 marks)
5. Briefly explain the role of Variable surface genes (VSG) in pathogenesis of African Trypanosomiasis (4 marks)
6. List and explain the virulence factors and toxins produced by various species of pathogenic streptococci (4 marks)
7. Briefly explain why mutant HIV-1 arise easily in patients who are on single antiretroviral therapy (5 marks)
8. Briefly explain the pathogenesis of Whooping cough (4 marks)
9. What is viral hemorrhagic fever and how do the symptoms relate to pathology of the diseases (6 marks)
10. List and briefly explain the various types of vaccines (6 marks)

SECTION II: Answer Question 11 and ANY Other ONE question (30 marks)

11. Discuss the structure, genomic organization and replication strategy used by the Human Immunodeficiency virus type 1 (HIV-1) (16 marks)
12. Discuss epidemiology and pathogenesis of primary and secondary tuberculosis in humans (14 marks)
13. Explain the molecular mechanism in the etiology *Vibrio cholera* infection. In your discussion relate the pathogenesis to the clinical symptoms seen. (14 marks)
14. Discuss mechanisms by which *Plasmodium falciparum* enters cells and relate the pathogenesis to pathology and clinical signs in infected patients (14 marks)