



MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC AND COMMUNITY HEALTH

THIRD YEAR SPECIAL/SUPPLEMENTARY FOR
BACHELOR OF SCIENCE IN PUBLIC HEALTH.

PPH 312: DYNAMICS OF INFECTIOUS DISEASES

DATE: 25/9/2019

TIME: 2.00-4.00 PM

INSTRUCTIONS

This paper consists of two sections A and B

Section A is compulsory

Section B choose any two (2) questions

SECTION A (30 Marks) Compulsory

QUESTION ONE

- a) Define the following terms as used in infectious diseases (3 marks)
 - i) Immunogenicity
 - ii) Pathogenicity
 - iii) Virulence
- b) Differentiate between latent period and incubation period in infectious diseases (3 marks)
- c) Given the following data in population X of school children at risk of acquiring chicken pox:
Calculate the attack rate and interpret (3 marks)
 - i) Children exposed = 2210
 - ii) Children ill = 300
- d) Explain the assumptions of compartmental models used in prediction of spread of infectious diseases (3 marks)
- e) State with examples modes of indirect transmission of infectious diseases (3 marks)

- f) State the special features that distinguishes the epidemiology of infectious diseases from non infectious diseases . (3 marks)
- g) Identify the types of reservoir in infectious diseases (3 marks)
- h) Giving examples, outline the outcomes of infectious diseases in a population (3 marks)
- i) Using examples, explain the types of rehabilitation in tertiary prevention of infectious diseases (3 marks)
- j) Explain the importance of mathematical modelling in infectious disease dynamics (3 marks)

SECTION B: CHOOSE ANY TWO (2) QUESTIONS. EACH QUESTION IS 20 MARKS

QUESTION TWO

- a) Discuss the ecological factors that influence occurrence of malaria (10 marks)
- b) Analyse the sociocultural aspects in your community that would jeopardize prevention and control of Ebola in presence of an index case. (10 marks)

QUESTION THREE

- a) Discuss the role of vaccination in prevention of infectious diseases (10 marks)
- b) "Kick polio out of Kenya" denoted efforts by the ministry of health over the years to eradicate the disease. Discuss in view of infectious disease control. (10 marks)

QUESTION FOUR

- a) Explain sources of data for the determinants of basic reproductive number in modelling of infectious diseases (10 marks)
- b) Discuss environmental factors contributing to emergence and re-emergence of infectious diseases (10 marks)

QUESTION FIVE

- a) Using the epidemiologic criteria justify the use of VIA/VILLI as a screening intervention in Human papiloma virus infection. (10 marks)
- b) Discuss the global trends and evolution of infectious disease control (10 marks)

