



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)
University Examinations for 2015/2016 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE IN POPULATION HEALTH

HEH 200: INTRODUCTION TO EPIDEMIOLOGY

DATE: 12/8/2016

TIME: 8.30-10.30 AM

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 epidemiology

- i. Endemic
- ii. Incidence
- iii. Risk factor
- iv. Host
- v. Vital statistics

(5 marks)

- b) Highlight the importance of the study of epidemiology (5 marks)
- c) Giving relevant examples, briefly describe the natural history of a chronic disease such as diabetes (8 marks)
- d) The findings of a survey carried out in an ASAL County of Kenya with a population of 6 million people showed that 60,000 deaths occurred during the year ending in December 31st, 2015. These included 30,000 deaths from cholera among 100,000 people who were sick with cholera. Showing all your working, calculate the:-
- i. Cause-specific mortality for cholera in the county in 2015? (4 marks)
 - ii. Case-fatality rate for cholera in 2015? (4 marks)
 - iii. Crude mortality rate in the County? (4 marks)

SECTION B: CHOOSE ANY TWO (2) QUESTIONS

QUESTION TWO

- a) Outline an example of a retrospective study and explain why retrospective studies are characterized by minimal drop-out problems (6 marks)
- b) Differentiate between experimental and non experimental study designs in epidemiology. (6 marks)
- c) Identify four (4) factors that increase and four (4) factors that decrease disease prevalence rates. (8 marks)

QUESTION THREE

- a) Using relevant examples differentiate between ratios, a rates and proportions. Which of the three measures is the most important measure of morbidity and mortality and why (8 marks)
- b) Briefly discuss the criteria for disease causality (8 marks)
- c) Discuss what tertiary disease prevention entails (4 marks)

QUESTION FOUR

- a) State six (6) reasons why secondary disease prevention is important (6 marks)
- b) Outline the uses of morbidity data to an epidemiologist (4 marks)

- c) Discuss 5 (five) personal characteristics that influence ones exposure and susceptibility to disease (10 marks)

QUESTION FIVE

- a) Outline the characteristics of a good screening test (5 marks)
- b) Explain the variations in disease occurrence and frequency using the host, agent and environment model (15 marks)