TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF ENVIROMENT & HEALTH SCIENCES

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN COMMUNITY HEALTH (BSCH16J)

APH 4206: **PRINCIPLES OF EPIDEMIOLOGY**

END OF SEMESTER EXAMINATION

SERIES:APRIL2016

TIME:2HOURS

DATE: Pick DateApr2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of Choose Nochoose Sect/Quest. Attemptquestion ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE

i. Mombasa Island has a population of 1,200,000 people and continues to attract more migrants. In the last 5 years a total of 400,000 residents suffered from cholera. 1n 2014 alone 200,000 people (150,000 men and 50,000 women) suffered from cholera out of which 75 people died. With reference to this statement

   a) Calculate the case fatality rate of cholera in 2014. [3 marks]
   b) Calculate the mortality rate of cholera in 2014. [3 marks]
   c) Calculate the prevalence rate of cholera on the island. [3 marks]
   d) Calculate the incidence rate among men in 2014. [3 marks]
   e) Describe 3 ways in which cholera can be prevented in Mombasa [3 marks]

ii. Describe any 5 agent characteristics that influence disease patterns. [5 marks]

iii. State the herd immunity theory. [1 mark]

iv. Explain the four conditions that must be met for herd immunity to occur. [4 marks]

v. Explain five human body surfaces that act as sites of microbial shedding.[5 marks]

Question TWO

a) Discuss 6 steps that are important when carrying out outbreak investigations. [12 marks]
b) Discuss 4 reasons why it is important to study outbreaks. [8 marks]

Question THREE

Environmental degradation creates conducive conditions for vectors to thrive. Using appropriate examples, discuss any 10 food borne vectors in your community [20 marks]

Question FOUR

Students of TUM were screened for human papilloma virus (HPV) at the University of Washington Laboratories in Ganjoni. Out of the 1200 that were screened for HPV, 400 tested negative out of which 120 were indeed infected. Further analysis on the positive samples indicated that 160 students were not infected.

a) Calculate the sensitivity of this test. [3 marks]
b) Calculate the specificity of this test. [3 marks]
c) Describe four preventive strategies of HPV in the community. [4 marks]
d) Discuss 5 biological reasons that increase the risk of HPV infections in women than men. [10 marks]

Question FIVE

Using appropriate examples discuss factors affecting disease incidence rates. [20 marks]