



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND
TECHNOLOGY**

SCHOOL OF HEALTH SCIENCES

**UNIVERSITY EXAMINATION FOR THE DEGREE OF MASTER OF PUBLIC
HEALTH**

SPECIAL EXAMINATIONS NOV. 2020

COURSE CODE: HMP 5126

COURSE TITLE: Epidemiologic Methods

EXAM VENUE:

DATE:

EXAM SESSION:

TIME: 3 HOURS

Instructions

- 1. Answer question 1 (compulsory) and any other 3 questions**
 - 2. Candidates are advised not to write on the question paper**
 - 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**
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- 1) Briefly describe the advantages and disadvantages of each of the following study designs,
1) longitudinal cohort studies (5 marks), b) case control studies (5 marks), c) cross-sectional studies (5 marks)
(Total marks=15)

2) Describe confounding effect (5 marks) and explain how to control it at study designs (5 marks) and analysis stages (5 marks)

(Total marks=15)

3) The following tables display the relationship between current smoking and the incidence of death during 24 years of follow-up from a study in a given environment:

	Death	
	+ve	-ve
Smokers	40	80
Non smokers	100	750

a. Use the information in the table to answer the following questions: Calculate

1. Estimated risk amongst smokers (5 mark)
2. Estimated risk amongst non smokers (5 mark)
3. Relative Risk (5 marks)

(Total marks=15)

4. In a study to demonstrate the effect of insecticide treated nets on all cause childhood mortality communities were randomized to receive either ITNs or No ITNs. At the end of the study the relative risk of childhood mortality in communities where ITN was not issued was calculated as 3 (RR=3).

a) What does this mean in practical terms (4 marks)

b) What type of study design was this (4 marks)

c) Name and describe sources of bias in the study (4 marks)

d) Discuss ethical concerns in these kinds of study designs (3 marks)

(Total marks =15)

5) Usigu Division in Siaya County, western Kenya is highly endemic for intestinal schistosomiasis. In 1998 Usigu had a total population of 45,000 people. In the same year a study was conducted to know the proportion of people who had schistosomiasis. In this study 10, 0000 people were tested. Of these 2000 people were found to have intestinal schistosomiasis. Calculate: 1) the prevalence of schistosomiasis, 2) state the study design and 3) State possible reasons for under/overestimate of the prevalence (15 marks)

6) The baseline point prevalence of hypertension in African-American women aged 45-64 years included in the Atherosclerosis risk in communities study was found to be 56%. Over a follow-up period of six years in this study, the average yearly incidence of hypertension in these women was estimated to be about 5% and stable over the years. 1) Using these data estimate, the average duration of hypertension in the African-American women in this study (5 marks), 2) State possible reasons for overestimate of the incidence (5 marks), 3) state possible reasons for overestimate of prevalence in this study (5 marks).

Total = 15 marks