JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF HEALTH SCIENCES

UNIVERSITY EXAMINATION FOR MASTERS IN PUBLIC HEALTH

1st YEAR 2nd SEMESTER 2018 ACADEMIC YEAR

KISUMU CAMPUS

COURSE CODE: HMP 5126

COURSE TITLE: EPIDEMIOLOGIC METHODS

EXAM VENUE:

DATE: **TIME:** **3 HOURS**

Instructions:

1. Answer question 1(Compulsory) and any other three 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.

1. Describe the main differences between observational and experimental studies (15 marks).

2. a) Define confounder, bias and effect modifier (10marks)
   b) Describe strategies for dealing with confounding in an experimental study design (5 marks)

3. State the application of cross-sectional study designs and outline their main advantages and limitations (15 marks)

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

	5. Death	
	6. +ve	7. -ve
Smokers	8. 60	9. 100
Non smokers	10. 200	11. 850

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

I.	Estimated risk amongst smokers	(5 mark)
II.	Estimated risk amongst non smokers	(5 mark)
III.	Relative Risk	(5 marks)

6. Of 2, 872 persons who had received radiation treatment in childhood because of enlarged thymus, cancer of the thyroid developed in 24 and benign thyroid tumor developed in 52. A comparison group consisted of 5, 055 children who had received no such treatment (brothers and sisters of those children who had received radiation treatment). During the follow up period, none of the comparison group developed thyroid cancer, but benign thyroid tumor developed in 6.

a) Calculate the relative risk for benign thyroid tumors? (5 marks)

b) State factors that would result in under or overestimate of the relative risk and how you would deal with them to improve the accuracy of your estimates (10 marks)