



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY  
SCHOOL OF HEALTH SCIENCES**

**UNIVERSITY EXAMINATION FOR DEGREE OF MASTER**

**SPECIAL EXAMINATIONS NOV. 2020**

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**COURSE CODE: HMP 5135**

**COURSE TITLE: Hmp Disease Surveillance and Outbreak Investigation**

**EXAM VENUE: STREAM: MPH**

**DATE: EXAM SESSION:**

**TIME: 3.00 HOURS**

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**Instructions:**

- 1. Answer Question One 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.**

**Instructions: Answer question 1 and any other 3 questions. All questions carry equal marks**

Q1.

- a. You are called to help investigate a cluster of 17 persons who developed brain cancer in an area over the past couple of years. Most, perhaps all, used cell phones. Which study design would you choose to investigate a possible association between cell phone use and brain cancer?
- b. An outbreak of an acute respiratory disease, Disease X, occurred among volunteers, group leaders, and archaeologists who began working at a Native American archaeological site in Utah on June 18.

Case#	Date of onset	Case#	Date of onset
1	28 June	6	29 June
2	28 June	7	29 June
3	29 June	8	30 June
4	29 June	9	1 July
5	29 June	10	1 July

The average incubation period for Disease X is 12 days, with a minimum incubation period of 7 days. Using an epidemic curve and the average and minimum incubation periods for Disease X, identify the likely exposure period.

**Q2.** -The table below shows data from an investigation of an outbreak of *Salmonella* following a holiday banquet. Approximately 135 persons attended the party, and of 116 who were interviewed, 57 (49%) met the case definition. The number of cases among those who ate or did not eat each of the 9 food items are presented.

Food item	Persons who ATE specified food		Persons who DID NOT EAT specified food	
	Total	Number Ill	Total	Number Ill
Chicken stew	80	39	34	17
Spinach	64	34	51	23
Mbuzi Choma	64	34	51	22
Fish curry	81	53	35	4
Mushrooms	58	32	55	24
Potatoes	35	21	78	34
Beef curry	66	37	49	19
Carrots	30	19	85	37

Fired Rice	78	43	38	14
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- a. Re-construct the table and indicate the numbers not ill and food-specific attack rates for both categories.
- b. Determine which food item is the “culprit”.
- c. Calculate the risk ratio and interpret the results.

**Q3.** Describe in detail the characteristics of a well-conducted surveillance

**Q4.** Give an account of the criteria used for prioritizing health problems for surveillance and discuss the ways notifiable disease surveillance can be improved

**Q5** Ten adults suffering from diarrhoea and vomiting have been reported by a local general practitioner. All became ill within two days of attending a half day conference at a city hotel at which lunch was served. How would you investigate this?

**Q6.** Describe the challenges in outbreak investigations.