



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY  
SCHOOL OF SPATIAL PLANNING  
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE  
IN WATER RESOURCE AND ENVIRONMENTAL MANAGEMENT  
SEMESTER 2016/2017 ACADEMIC YEAR**

**CENTRE: MAIN CAMPUS**

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**COURSE CODE: PES 3413**

**COURSE TITLE: DISASTER PREPAREDNESS AND RESPONSE**

**EXAM VENUE:**

**STREAM: SPATIAL PLANNING**

**DATE:**

**EXAM SESSION:**

**TIME: 2 HOURS**

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**Instructions:**

- 1. Answer question 1 ( compulsory ) and ANY other 2 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.**

### QUESTION ONE

- a) Discuss five (5) ways how terrorism can be prevented (10 marks)
- b) Enumerate any five challenges with disaster relief logistics (10 marks)
- c) Discuss five major differences between disaster relief logistics and commercial logistics. (10 marks)

### QUESTION TWO

On Tuesday 19<sup>th</sup> September, 2017 a powerful earthquake struck Mexico killing at least 226 people across the country. At least 44 buildings collapsed or partially collapsed in Mexico City killing a number and wounding others. Many people were trapped in collapsed buildings, and hundreds of volunteers were working to dig them out of the rubble. Trees fell, fires broke out, bridges collapsed and there were gas leaks. Just hours before Tuesday's earthquake, buildings around the country had held annual evacuation drills. From this account, answer the following questions:

- a) Classify the disaster from the public health perspective (4 marks)
- b) Identify the other hazards created by the earthquake (8 marks)
- c) What actions should an individual take to ensure safety during an earthquake? (3 marks)
- d) What two vulnerabilities made the earthquake disastrous (5 marks)

### QUESTION THREE

In the month of October 2017, hurricane Nate made a landfall at Biloxi in Louisiana of USA causing flooding from the gulf of Mexico. The flooding was worsened by two weeks of incessant rainfall before the hurricane hit. The waters flooded roads and buildings leaving at least 30 people dead. From this account, answer the following questions:

- a) Identify the type of flooding at Biloxi in Louisiana (2 marks)
- b) What were the two major causes of flooding at Biloxi in Louisiana (5 marks)
- c) Besides the type of flooding identified in a) above, explain other remaining types of floods (6 marks)
- d) Classify the disaster according to the 2002 DEEP Center Classification perspective (3 marks)
- e) Explain how flooding can cause famine (4 marks)

### QUESTION FOUR

Famine is a common occurrence Somalia. From this account, answer the following questions:

- a) Discuss four causes of famine in Somalia (12 marks)
- b) If you were in charge of food relief aid to Somalia, discuss two major challenges you think you will face with logistics. (6 marks)
- c) What would be the fastest way to improve food security in Somali land? (2 marks)

### QUESTION FIVE

With the aid of a diagram, discuss the stakeholders involved in an emergency relief logistics supply chain (20 marks)