



The Co-operative University of Kenya
Quality co-operative training

SUPPLEMENTARY EXAMINATION

**EXAMINATION FOR THE DEGREE OF BACHELOR OF DISASTER RISK
MANAGEMENT AND SUSTAINABLE DEVELOPMENT**

UNIT CODE: BDRM 4214

UNIT TITLE: SIMULATION AND MODELLING IN DISASTER PREPAREDNESS

INSTRUCTION: ANSWER QUESTION 1 AND ANY OTHER 2 QUESTIONS

Question 1: Discuss the following;

- a) Discuss 4 objectives of table top simulation during disaster preparedness (8 marks)
- b) How can risk be assessed deterministically and probabilistically (4 Marks)
- c) Discuss 4 features of drills during disaster preparedness simulation exercises (8 marks)
- d) Difference between qualitative and quantitative risk analysis. (4 marks)
- e) Explain advantages to using simulations for disaster preparedness and response (6 marks)

Question 2(A) Explain 4 types of common probability distributions (8 marks)

Question 2(B) Discuss 3 advantages of Monte Carlo probability model over deterministic model (6 marks)

Question 2(C) Discuss 3 shortcomings of deterministic models (6 marks)

Question 3 A. Discuss value table top simulations in disaster preparedness (10 marks)

Question 3 B. explain why organizations should conduct regular disaster drills (10 marks)

Question (4A): discuss 6 differences between table top simulations and drills (12Marks)

Question (4B): What are 4 similarities between table top simulations and drills (8 Marks)

Question 5 A: Discuss 10 key components that are addressed in the simulation scenario development (10 marks)

Question 5 B: Explain 10 features that are considered during the “development of the situation” when conducting simulation exercise