



The Co-operative University of Kenya

END OF SEMESTER EXAMINATION DECEMBER-2019

**EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN DISASTER,
RISK & SUSTAINABLE DEVELOPMENT**

UNIT CODE: CODM 2405

UNIT TITLE: HAZARDOUS MATERIALS AND WASTER MANAGEMENT

DATE: DECEMBER, 2019

TIME:

INSTRUCTIONS:

- Answer question **ONE (compulsory)** and any other **TWO** questions

QUESTION ONE

- (a) Define the following terms
- Solid waste
 - Heavy metal
 - LD50
 - Toxicity
 - Incineration
- (b) Briefly, explain the difference between Mutagens and Teratogens, giving examples (5 marks)
- (c) Name any SIX examples of Heavy metals in the environment (3 marks)
- (d) Name THREE factors that affect/influence toxicity of pollutants in the environment (3 marks)
- (e) Using a diagram, outline the key components of an integrated solid waste management (ISWM) systems (6 marks)
- (f) Convert the following ratio of concentration into ppm (4 marks)
- 0.5mg/l
 - 50 kg/kg
- (g) Highlight FOUR categories of medical hazardous wastes (4 marks)

QUESTION TWO

- (a) Outline and discuss TEN major factors to consider when selecting waste collection and transportation vehicles in a less developed country (20 marks)

QUESTION THREE

- (a) With examples, define hazardous waste (4 marks)
- (b) With examples, describe toxicity and environmental effects of any FOUR trace elements (16 marks)

QUESTION FOUR

- (a) Giving examples, explain the management strategies for the following wastes
- Radioactive waste (10 marks)
 - E-Waste (10 marks)

QUESTION FIVE

- (a) Outline and explain the key environmental and social factors to consider when selecting and planning a sanitary landfill site for a city (20 marks)