

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**SECOND YEAR EXAMINATION FOR BACHELOR OF SCIENCE IN PUBLIC HEALTH**

**PUHE 254 – HAZARDOUS WASTE MANAGEMENT**

**STREAMS: BSC (PUHE) Y2S1**

**TIME: 2 HOURS**

**DAY/DATE: .....**

**.....**

**INSTRUCTIONS**

1. Do not write anything on the question paper.
2. Mobile phones and any other reference materials are NOT allowed in the examination room.
3. The paper has three sections. Answer ALL questions in Sections I and II and ONE question in section III.
4. All your answers for Section I (MCQs) should be on one page.
5. Number ALL your answers and indicate the order of appearance in the space provided in the cover page of the examination answer booklet.
6. Write your answers legibly and use your time wisely

**SECTION 1: MULTIPLE CHOICE QUESTIONS [10 MARKS]**

1. Waste management hierarchy is one of the key concepts in effective management of hazardous waste. Which one of the following prioritizations of interventions is likely to attain the highest efficiency in hazardous waste management?
  - a. Reduce > Reuse > Recycle > Recover > Treat > Dispose
  - b. Prevent > Reduce > Reuse > Recycle > Recover > Treat > Dispose
  - c. Prevent > Reduce > Reuse > Recycle > Treat > Recover > Dispose
  - d. Prevent > Reduce > Reuse > Recycle > Recover > Dispose > Treat
2. What is the typical proportion of infectious wastes in Healthcare waste?
  - a. 5%
  - b. 10%

- c. 85%
  - d. 75%
3. Which one of the following characteristic best defines cytostatic waste?
- a. Ability to suppress the growth and multiplication of the cell
  - b. Toxic to the cell
  - c. Toxic to the deoxyribonucleic acid
  - d. Ability to inhibit the development of abnormal tissue growth
4. Which one of the following properties is not considered when categorizing chemical wastes from healthcare facilities?
- a. Toxicity
  - b. Corrosivity
  - c. Radioactivity
  - d. Flammability
5. According to World Health Organization, what is the colour of container and markings for “other infectious waste, pathological and anatomical waste”
- a. Brown, labelled with appropriate hazard symbol
  - b. Yellow, marked “INFECTIOUS”, with biohazard symbol
  - c. Yellow labelled with radiation symbol
  - d. Yellow with biohazard symbol
6. What is the ideal temperature for refrigerating infectious wastes that is expected to be stored for more than a week?
- a. 5°C to 10°C
  - b. 3°C to 8°C
  - c. 2°C to 6°C
  - d. 4°C to 9°C
7. It is important that bodies are buried at sufficient depth to eliminate odours and prevent disturbance by carrion and dogs. What is the recommended minimum covering of soil of a grave?
- a. At least 50cm
  - b. At least 100cm
  - c. At least 150cm
  - d. At least 200cm
8. What does the term Half-Life refer to in reference to radioactive waste?
- a. The time it takes for all its atoms to decay
  - b. The time it takes for half of its atoms to decay
  - c. The time it takes to dissipate all its harmful atoms
  - d. The time it takes to manifest its harmful traits

9. What is the average duration for washing hands by a healthcare worker involved in potentially infectious procedures
- 10 to 30 seconds
  - 30 to 40 seconds
  - 40 to 60 seconds
  - 30 to 60 seconds
10. Which one of the following infections pose the greatest risk to healthcare waste handlers?
- HIV
  - Hepatitis B
  - Hepatitis C
  - Tuberculosis

## **SECTION II: SHORT ANSWER QUESTIONS [40 MARKS]**

1. Define the following terms
  - a. Hazardous Waste [2 marks]
  - b. Radioactive Waste [2 marks]
2. Discuss at least six (6) characteristics of hazardous waste [6 marks]
3. E-waste is “any appliance using an electric power supply that has reached its end-of life”. Outline at least five (5) broad classes of E-waste [5 marks]
4. State at least five (5) basic principles applicable in the management of radioactive waste [5 marks]
5. Proper management of Healthcare waste requires active government intervention. Ideally, the government is required to develop a policy stipulating the principles guiding the management of hazardous wastes. Discuss at least five (5) guiding principles underlying effective and controlled management of hazardous wastes [10 marks]
6. Ebola virus can be transmitted by laceration and puncture with contaminated instruments used during postmortem care, through direct handling of dead bodies without appropriate personal protective equipment, and through splashes of blood or other body fluids to unprotected mucosa which occur during postmortem care. Outline at least ten (10) supplementary guidance for handling of dead bodies of suspected/confirmed Ebola Virus Disease [10 marks]

### **SECTION III: LONG ANSWER QUESTIONS [20 MARKS]**

1. Standard precautions are meant to reduce the risk of transmission of bloodborne and other pathogens from both recognized and unrecognized sources. They are the basic level of infection control precautions which are to be used, as a minimum, in the care of all patients. Discuss at least ten (10) key elements of standard precautions applicable in healthcare facilities [20 marks]

2. The term 'radioactive waste' covers a wide variety of material, ranging from wastes that can be put safely into a dustbin to items that need remote handling, heavy shielding and cooling to be managed safely. Discuss the various categories of radioactive wastes [20 marks]