



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

**UNIVERSITY EXAMINATION FOR DIPLOMA IN COMMUNITY HEALTH AND
DEVELOPMENT**

2ND YEAR 1ST SEMESTER 2019 ACADEMIC YEAR

KISII CAMPUS

COURSE CODE: HDC 2113

COURSE TITLE: WASTE MANAGEMENT

EXAM VENUE: LR 8

STREAM: (Dip.Comm Hlth & Dev)

DATE: 3RD May 2019

EXAM SESSION: 12.00 – 1.30pm

TIME: 1.5 HOURS

Instructions:

- 1. Answer all questions in section A and any other 2 questions in Section B.**
- 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**

SECTION A (Answer all questions in this section 30mks)

1 Define the following terms as used in waste management (3mks)

- i)** flume
- ii)** Sludge
- iii)** Solid wastes
- iv)** Sullage
- v)** Biological Oxygen Demand (BOD)
- vi)** Recycling as used in waste management

2 State any **six** functional elements in the activities associated with the management of solid wastes from the point of generation to final disposal site (3mks)

3 (a) Mention any three methods commonly used to assess solid waste quantities (3mks)

(b) Describe any three ways in which source reduction can be achieved (3mks)

4 (a) Mention any 3 reasons why we treat waste water (3mks)

(b) List 6 reasons that may hinder waste collection and transportation from waste storage sites common in most Kenyan urban areas (3mks)-

5 Poor waste management will encourage diseases development which intern affect man. List any 4 diseases that may be brought about by unmanaged waste in your area of work (2mks)

6 List 2 Acts of parliament that may help you manage waste in your area of work (1mk)

7 Some people regard waste as useless materials but this is not true. List four (4) types of materials that can be salvaged from waste (2mks)

8 Mention any 4 physical characteristics of waste water (2mks)

9 Biochemical oxygen demand (BOD) can be defined as the amount of oxygen required to stabilize organic matter under aerobic conditions by the action of bacteria and other micro-organisms. Mention the importance of BOD tests (3mks)

10 Big towns such as Kisii, Kisumu, Nairobi need to invest incinerators to manage their waste due to lack of space for disposal. List 2 advantages and 2 disadvantages of opting for an incinerator as a means of proper waste management (2 mks)

SECTION B (Answer any two questions from this section 30 mks)

1 (a) Explain the importance of on-site handling of solid waste (10mks)

(b) Describe precisely what you understand by the term *sanitary land fill* and list the advantages and the disadvantages of this method of solid waste disposal (5mks)

2 Explain the different types of solid collection services given to residential, commercial and industrial areas (15mks)

3 (a) Disposal of solid waste by incineration can be very effectively carried out in big hotels as well as in institution such as hospitals, schools, etc. List and describe waste **types** that are not recommended for incineration? (8 mks)

(b) Explain how you can safely dispose off the waste types listed above (7mks)

4 There is no single individual sewage disposal technique that can be universally applied under all conditions. However, the selection of a particular method will depend upon some factors. Discuss (15mks)