



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

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

1st YEAR 1st SEMESTER 2016/2017 ACADEMIC YEAR

KISII CAMPUS

COURSE CODE: HDC 2113

COURSE TITLE: WASTE MANAGEMENT

EXAM VENUE: ROOM 10 STREAM: Diploma Comm. Hlth & Dev)

DATE: AUGUST 2016

EXAM SESSION:

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 the questions in this section)

1. Define the following terms as they are used in waste management **(3mks)**
 - (i) Refuse
 - (ii) Biodegradable
 - (iii) Sludge
 - (iv) Special wastes
 - (v) Biological Oxygen Demand (BOD)
 - (vi) Influent
2. You as a community health Development Officer knows that there are many problems associated with the management of solid wastes in today's society and especially in urban areas. Mention four of such problems **(2mks)**
3. Write down six recommendations that you may forward to the ministry concerned with waste management to mitigate for the problems you mentioned in question 2 above **(3mks)**
4. Specific waste disposal methods are applicable depending on the nature of waste produced and socio-economic capacity .Mention two methods of solid waste disposal suitable for a small rural market in Kenya? **(2mks)**
5. There are many factors that affect waste generation rates in any town in Kenya. Mention and briefly describe any three such factors **(3mks)**
6. List any **four** contaminated liquid wastes originating from patients in a health facility in Kenya **(2mks)**
7. Describe briefly the physical characteristics of waste water **(3mks)**
8. Mention the purpose of contaminated waste management **(1mk)**
9. Differentiate between septage and septic tank **(2mks)**
10. Waste treatment methods are generally grouped into three general categories. Mention them **(3mks)**
11. Before waste water enters the treatment ponds it has to pass through screens .Mention the importance of these screens **(2mks)**
12. Mention four problems associated with Activated sludge process **(2mks)**
13. Salvaging of valuable materials from solid waste is today an important economic activity even though, it is accompanied by a number of health dangers. Name four consequences or dangers of solid waste salvaging **(2mks)**

SECTION B (ANSWER ANY TWO QUESTIONS IN THIS SECTION)

1. 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 certain major factors.
 - a) Explain the statement above (7mks)
 - b) Draw and name all the parts of a septic tank (3mks)
 - c) Before discharging waste water into the environment especially into water bodies, it is necessary to provide some degree of treatment as required by the health authorities and this is a condition that must be met by most manufacturing industries .Explain the basic purposes of waste water treatment? (5mks)
2. Solid waste management is that whole process of activities taking place at various stages
 - (a) Mention any four critical stages and briefly describe what happens at each stage (10mks)
 - (b) Explain briefly what will happen if the stages you dealt with above are assumed or avoided (5mks)
3. Many towns in Kenya practice crude dumping of solid waste as the final disposal method though it is well known that it is Not a good method of solid waste disposal
 - (a) Describe the disadvantages and advantages of this method (10mks)
 - (b) Mention and explain the methods of solid waste disposal that you may recommend to be employed by the concerned institutions to solve the Health problems of question (a) above (5mks)
4. Health facilities in Kenya produce a lot of hospital contaminated wastes. As a Health Development officer in-charge of students on practical attachment, explain the best procedure to be undertaken when disposing of used and contaminated hospital syringes and needles in a County Hospital. (15mks)