

2922/302

ENVIRONMENTAL WASTE MANAGEMENT,
E.I.A AND ENVIRONMENTAL LAW

June/July 2022

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN ENVIRONMENTAL SCIENCE AND TECHNOLOGY

MODULE III

ENVIRONMENTAL WASTE MANAGEMENT, E.I.A AND ENVIRONMENTAL LAW

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

answer booklet;

non-programmable scientific calculator.

This paper consists of TWO sections; A and B.

Answer ALL the questions in section A and any THREE questions from section B in the answer booklet provided.

Each question in section A carries 4 marks while each question in section B carries 20 marks.

Maximum marks for each part of a question are as shown.

Candidates should answer the questions in English.

This paper consists of 3 printed pages.

Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing.

SECTION A (40 marks)

Answer ALL questions in this section.

1. List **four** parameters used to measure the quality of water. (4 marks)
2. State **four** benefits of re-using water in processing industries. (4 marks)
3. With the aid of a diagram, describe the working of trickling filters used in wastewater treatment. (4 marks)
4. State **four** objectives of conducting Environmental Impact Assessment (E.I.A). (4 marks)
5. Differentiate between high level and low level radioactive waste. (4 marks)
6. List **four** considerations taken into account by a committee reviewing Strategic Environmental Assessment(SEA). (4 marks)
7. Differentiate between impact and compliance monitoring processes in E.I.A. (4 marks)
8. State **four** considerations taken into account in the measurements of noise levels according to Environmental Management and Coordination Act in Kenya. (4 marks)
9. Explain the following principles of environmental policy:
 - (a) precautionary principle; (2 marks)
 - (b) polluter pay principle. (2 marks)
10. State **four** benefits of enforcing environmental laws in Kenya. (4 marks)

SECTION B (60 marks)

Answer any THREE questions from this section.

11. (a) State **four** rules observed while transporting hazardous waste. (4 marks)
- (b) (i) With the aid of **four** chemical equations outline the process of producing soft water in a large scale lime -soda softening plant. (7 marks)
- (ii) Explain **two** challenges encountered in the process in (i). (4 marks)
- (iii) Using **three** chemical equations, explain how the challenges in (ii) can be addressed. (5 marks)

12. (a) State **four** considerations taken into account in constructing a landfill. (4 marks)
- (b) Draw a labelled schematic diagram of an ozone water treatment system. (10 marks)
- (c) State **six** negative impacts of an improper solid waste management system by a county Government in Kenya. (6 marks)
13. (a) Outline the environmental auditing process. (5 marks)
- (b) (i) A development company intends to establish a quarry close to a river serving the local population. State **five** possible negative impacts of the project. (5 marks)
- (ii) State mitigating measures for each of the impacts identified in (i). (5 marks)
- (c) State **five** reasons for carrying out monitoring process in E.I.A. (5 marks)
14. (a) (i) Define strategic environment assessment (SEA). (2 marks)
- (ii) Outline **four** activities carried out while conducting scoping in SEA process. (4 marks)
- (b) List **six** items contained in an audit plan. (6 marks)
- (c) Outline **four** sections contained in an audit report. (8 marks)
15. (a) Explain **six** objectives of environmental policy in Kenya. (12 marks)
- (b) State the role played by each of the following agencies in relation to environmental law in Kenya:
- (i) National Government; (2 marks)
- (ii) County Government; (2 marks)
- (iii) National Environmental and Management Authority; (2 marks)
- (iv) National Environmental tribunal. (2 marks)

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