

2528/302
2922/302
ENVIRONMENTAL WASTE MANAGEMENT,
E.I.A AND ENVIRONMENTAL LAW
June/July 2018
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 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. (a) Define the term 'waste management'. (2 marks)
- (b) State two objectives of waste management. (2 marks)
2. Name four physico-chemical processes used in treating municipal wastewater. (4 marks)
Handwritten: biological, ozone, chlorine, filtration, flu
3. List four factors used to characterize municipal solid waste. (4 marks)
Handwritten: quantity, composition, moisture, density
4. (a) Describe 'screening' as used in Environmental Impact Assessment (E.I.A). (2 marks)
- (b) State two objectives of screening in E.I.A. (2 marks)
5. Differentiate between baseline monitoring and compliance monitoring in environmental assessment. (4 marks)
6. Distinguish between direct impacts and indirect impacts in environmental assessment. (4 marks)
7. State four reasons that prompted National Environmental Management authority (NEMA) to ban the use of plastic bags in Kenya. (4 marks)
8. State any five effects of noise pollution to human health. (4 marks)
Handwritten: hearing loss, stress, sleep disturbance, etc.
9. List any four limitations of accessing environmental justice in Kenya. (4 marks)
10. State four requirements a waste transporter must observe when transporting hazardous waste. (4 marks)

SECTION B (60 marks)

Answer any THREE questions from this section.

11. (a) Define the term 'hazardous waste'. (2 marks)
- (b) Explain four measures that can be put in place by a manufacturing industry in order to minimize generation of waste. (8 marks)
Handwritten: incineration, recycling, reuse, etc.
- (c) Explain five control measures that a company handling hazardous materials can implement to minimize exposure. (10 marks)

12. (a) Explain **three** factors that determines the extent of water treatment. (6 marks)
Handwritten: 1. Population growth, 2. Industrial growth, 3. Urbanization
- (b) Describe the following municipal sewage treatment processes:
- (i) primary treatment; (6 marks)
 - (ii) secondary treatment using biological reactors; (4 marks)
 - (iii) tertiary treatment. (4 marks)
13. (a) (i) Define the term 'Strategic Environmental Assessment' (SEA). (2 marks)
- (ii) Explain any **five** benefits of SEA to an organisation. (10 marks)
- (b) Explain **four** challenges faced by developing countries in conducting environmental impact assessment. (8 marks)
14. (a) (i) Define the term 'mitigation' as used in environmental assessment. (2 marks)
- (ii) A firm conducting an environmental impact assessment of a cement industry identifies dust pollution as an impact. List **five** mitigation measures that can be recommended. (5 marks)
- (b) State **three** activities that can be undertaken on each of the following mitigation steps:
- (i) impact avoidance; (3 marks)
 - (ii) impact minimization; (3 marks)
 - (iii) impact compensation. (3 marks)
- (c) State **four** factors that determine the magnitude of impacts in a development project. (4 marks)
15. (a) Explain the following roles played by the courts in enforcing environmental law:
- (i) adjudication; (2 marks)
 - (ii) sentencing; (2 marks)
 - (iii) interpretative; (2 marks)
 - (iv) supervisory. (2 marks)
- (b) Explain **six** benefits derived from enforcing environmental laws in Kenya. (12 marks)

THIS IS THE LAST PRINTED PAGE.