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

Oct./Nov. 2018

Time: 3 hours

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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

Your 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 15 marks.

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

Candidates should answer the questions in English.

This paper consists of 4 printed pages.

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

SECTION A (40 marks)

Answer ALL the questions in this section.



1. List **four** variables used to measure water quality. (4 marks)
2. Name **four** categories of waste material. (4 marks)
3. ✕ State **four** goals of setting up a landfill. (4 marks)
4. ✕ Outline the management of radioactive waste in order of priority. (4 marks)
5. (a) Define 'environmental impact assessment'. (2 marks)
(b) State any **two** objectives of carrying out environmental impact assessment on development projects. (2 marks)
6. The following were identified as potential impacts on national government initiated projects A and B. Identify the impact as either indirect, cumulative, direct or induced. (4 marks)

Impact I	Project A is likely to discharge a toxic chemical into a nearby water body;
Impact II	Both project A and B will lead to unacceptable high noise levels in the environment;
Impact III	Project B is likely to bring loss of property values in the area;
Impact IV	Project A and B will lead to construction of a medical facility in the area.
7. ✕ State **four** contents in the introductory part of an environmental impact assessment report. (4 marks)
8. Explain the following roles of judicial courts in enforcement of environmental law:
(a) interpretative role; (2 marks)
(b) supervisory role. (2 marks)
9. A lorry carrying waste emitting a noxious smell was spotted dumping the waste in the field of a primary school. It was later found that the nearby stream where the lorry passed through was contaminated with the waste. The driver was not carrying a valid waste transport license. Identify **four** offences that was committed under the Environmental Management and Coordination Act (EMCA). (4 marks)
10. Explain the following principles of environmental law:
(a) polluter pays principle; (2 marks)
(b) precautionary principle. (2 marks)

SECTION B (60 marks)

Answer any **THREE** questions from this section.



11. (a) Define hazardous waste. (2 marks)
- (b) List four characteristics of a material for it to be termed hazardous. (4 marks)
- (c) Explain four requirements of materials used to package hazardous waste. (8 marks)
- (d) State six responsibilities of hazardous waste transporter. (6 marks)
12. (a) State four factors to be considered in designing and operating an industrial water treatment facility. (4 marks)
- (b) Describe the primary treatment of municipal waste. (7 marks)
- (c) Outline the treatment of sludge before disposal. (4 marks)
- (d) (i) Differentiate between recycling and re-use of water. (2 marks)
- (ii) State three ways in which water may be re-used. (3 marks)
13. (a) List any four methods used to determine the significance of environmental impacts. (4 marks)
- (b) Explain the following principles of environmental impact assessment (E.I.A):
- (i) * purposive; (2 marks)
 - (ii) practical; *accessible and user-friendly* (2 marks)
 - (iii) cost effective; *proponent* (2 marks)
 - (iv) adaptive; (2 marks)
 - (v) participative. *public* (2 marks)
- (c) Explain three importance of ensuring the social effects of a development project are taken into consideration. (6 marks)
- Legal clash with traditional
 - Interested party dominance
 - Culture

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14. (a) Describe the following methods used to identify impacts of development projects:
- (i) checklists; (2 marks)
 - (ii) networks. (2 marks)
- (b) State three factors to be considered when choosing methods used to identify impacts. *Practicality, - Feasibility, - Cost* (3 marks)
- (c) Table 1 shows parameters used to identify impacts and the project activities. Prepare an impact matrix indicating the likely impacts of each activity. (6 marks)

Table 1

Parameters	Project Activities
Erosion risks	Site cleaning
Contamination	Site preparation
Water quality	Heavy equipment operations
Alteration of surface	Disposal of construction waste
Air quality	Generation of sewage
Noise and odour	Deforestation
	Storage of waste and stabilization

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- (d) (i) Define 'mitigation measures' as used in environmental assessment. (2 marks)
 - (ii) State five measures that can be undertaken to mitigate against water pollution. *- Proper disposal of waste water, - Education, - Water quality assessment* (5 marks)
15. (a) State five aims of National Environmental Management Authority (NEMA) in administration of environmental law. (5 marks)
- (b) Explain four benefits of enforcing environmental law in Kenya. (8 marks)
- (c) Describe the role played by the police in enforcement of environmental law. (3 marks)
- (d) State any four roles played by the government in enforcing environmental programs. (4 marks)



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