

Name \_\_\_\_\_ Index No. \_\_\_\_\_  
 2528/202 Candidate's Signature \_\_\_\_\_  
 2922/202 Date \_\_\_\_\_  
**ENVIRONMENTAL POLLUTION CONTROL, HEALTH AND SAFETY**  
 Oct./Nov. 2013  
 Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL  
**DIPLOMA IN ENVIRONMENTAL SCIENCE AND TECHNOLOGY**  
**MODULE II**

ENVIRONMENTAL POLLUTION CONTROL, HEALTH AND SAFETY  
 3 hours

**INSTRUCTIONS TO CANDIDATES**

Write your name and index number in the spaces provided above.  
 Sign and write the date of examination in the spaces provided above.  
 You should have a non-programmable scientific calculator for this examination.  
 This paper consists of TWO sections: A and B.  
 Answer ALL questions from section A and any THREE questions from section B in the spaces provided in this question paper.  
 Each question in section A carries 4 marks while each question in section B carries 20 marks.  
 Candidates should answer the questions in English.

**For Examiner's Use Only**  
 Section A

Question	1	2	3	4	5	6	7	8	9	10	TOTAL
Candidate's score											

Section B

Question	11	12	13	14	15	TOTAL
Candidate's score						

GRAND TOTAL

This paper consists of 16 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 questions from this section in the spaces provided.

1. State any two human health effects of the following gaseous pollutants.

(a) sulphur

(2 marks)

(b) nitrogen dioxide.

(2 marks)

2. Describe the working of an emission control device.

(4 marks)

3. Distinguish between an insecticide and a herbicide.

(4 marks)

4. Define the term smog.

(2 marks)

2528/202, 29/22/202

2

(b) Name two geographic factors affecting smog forming emissions.

(2 marks)

5. Distinguish between hazard and safety.

(4 marks)

6. State any four requirements for a safe healthy workplace environment.

(4 marks)

7. Explain any two steps used in the prevention and control of exposures to hazards at workplace.

(4 marks)

8. Identify the point of detection for each of the following toxic substance in human beings.

(a) lead.

(1 mark)

2528/202, 29/22/202

3

Turn over

SECTION B (60 marks)

Answer any **THREE** questions from this section in the spaces provided after question 15.

- (b) volatile compounds. (1 mark)
- (c) sodium monoxide. (1 mark)
- (d) cadmium. (1 mark)

9. Name four sources of law in Kenya. (4 marks)

10. State the four basic classification of hazardous substances. (4 marks)

11. (a) Distinguish between primary air pollutants and secondary air pollutants. (4 marks)

(b) Describe any three ways green plants reduce air pollution in the atmosphere. (6 marks)

(c) Explain any five methods of controlling air pollution in motor vehicle exhausts. (10 marks)

12. (a) Describe the formation of acid rain. (6 marks)

(b) Explain any four effects of acid rain on the environment. (8 marks)

(c) Explain any three ways countries are cooperating to reduce the effects of acid rain on the environment. (6 marks)

13. (a) With the aid of illustration, explain the basis for study of air pollution dispersion. (8 marks)

(b) Explain how the following enhance the dispersion of pollutants in the atmosphere:

(i) nature of the atmosphere; (3 marks)

(ii) plume; (3 marks)

(iii) obstructions; (3 marks)

(iv) height of smoke stacks. (3 marks)

14. (a) Explain any five factors that determine absorption of contaminants on an exposed human skin. (10 marks)

(b) Describe how a liver regulates chemical contaminants. (10 marks)

15. (a) (i) State the purpose of screening tests in occupational hygiene survey. (2 marks)

(ii) Name any six characteristics of screening tests in occupational hygiene survey. (6 marks)

(b) Explain the process of addressing issue of occupational hygiene health of an individual. (8 marks)

(c) Distinguish between occupational disease and occupational hygiene. (4 marks)

