2528/202 2922/202 ENVIRONMENTAL POLLUTION CONTROL, HEALTH AND SAFETY June/July 2016 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

You should have the following for this examination: Answer booklet:

· A 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 indicated.

Do NOT remove any pages from this question paper. Candidates should answer the questions in English.

This paper consists of 3 printed pages.

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

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Turn over

# SECTION A (40 marks)

# Answer ALL the questions in this section.

1.	State any four factors which contribute to high poliution levels in the manufacture of the state	(4 marks)
-	> Desperation	
2.	Draw the chemical structures of the following organic air pollutants:	
	(a) dimethyl sulphidet	(2 marks)
	(b) methylamine. 48-6-30 @ 50	(2 marks)
3.	With the aid of chemical equations, describe the process of removing sulphur of	lioxide from coal
	by fluid bed combustion.	(4 marks)
4.	State four harmful effects of cadmium exposure to human health.	(4 marks)
5.	State any four sources of organic pollutants in water,	(4 marks)
6.	Define the following terms as used in environmental health:	(2 marks)
	(a) epidemiology; - 5 to by the second source of th	(2 marks)
7.	State any four human factors that contribute to accidents in a workplace.	(4 marks)
8.	State four possible causes of a fire outbreak in a chemical manufacturing plan	
9.	Give any four reasons for administering First Aid to an injured worker.	(4 marks)
10.	A foreman left a sharp tool on a table which led to the injury of a technician.	State four
	offences that the foreman committed under the occupational safety and health	

2528/202 2922/202 June/July 2016

## SECTION B (60 marks)

## Answer any THREE questions from this section.

11.	(a)	State four measures that can be taken to reduce incidences of acid rain.	(4 marks)
	(b)	Explain two ways of controlling carbon monoxide emission in an automotive	ve engine.
		- Phanel will return	(4 marks)
	(c)	State six harmful effects of each the following:	
		_ per in the first discount of a serious of	
		(i) Nitrogen oxides;	(6 marks)
		(ii) Acid rain Carra 63.47 = Of safe us us to be bounded.	
		(ii) Acid rain. Caron - direction of total for leading to	(6 marks)
12.	(a)	Explain four negative effects of smog.	(8 marks)
	(b)	Write a chemical reaction describing the:	
		(i) formation of Nitrate radical;	(2 marks)
		(ii) dissociation of Nitrate radical during daytime.	(2 marks)
			A. Manusay
	(c)	Explain the role of nitrate radical in smog formation.	(2 marks)
			(2 milens)
	(d)	State six factors that affect dispersion of air pollutants to the atmosphere.	(6 marks)
		The same and a second and the same and a second a second and a second	(o marks)
13.	(a)	With the aid of a chemical equation, explain the limitation of soap as a clear	uing agent
		Control of story as a count	(5 marks)
	(b)	Explain the measures that can be taken to reduce the limitation in 13(a).	(3 marks)
		6	(Simuka)
	(c)	Explain six duties of a hospital officer charged with the responsibility of cor	trolling
	11500	exposure of hazardous substances to other employees.	(12 marks)
			Van sammen
14.	(a)	Differentiate between occupational hygiene and occupational medicine.	un in a mor
	(b)	Explain any five roles of an occupational hygienist employed in a health fac	
	100	LAVALET FUA HOTSEY THE AIR	(10
	(c)	State any six benefits that a company gets by operating an appropriate occup health and safety system.	(10 marks)
		health and safety system - Production - modules an appropriate occup	augnai // market
		meanth and safety system.	(0 marks)
15.	(a)	Explain any five considerations taken when selecting a protective clothing for	
10		worker in a chemical manufacturing factory.	(10 marks)
		- Bye - Line speed on some	(10 marks)
	(b)	A safety engineer is required to undertake a safety audit in an organisation.	Evalsia
		five areas that the officer will check to ensure that the work environment is s	
		Letter - Santes - willing was	fro musay
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