

Се	ntre	Number

71

Candidate Number

General Certificate of Secondary Education 2011–2012

Science: Single Award (Modular)

Human Activity and Health Module 2 Foundation Tier

[GSC21]

MONDAY 27 FEBRUARY 2012

11.00 am-11.45 am

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45 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Write your answers in the spaces provided in this question paper. Answer **all seven** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 45. Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

For Examiner's use only		
Question Number	Marks	
1		
2		
3		
4		
5		
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7		
Total Marks		



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(a) Given below are two examples of pollution. Using lines, link the 1 Examiner Only example of pollution to a suitable method of reducing its effect. Marks Remark Example of pollution Method to reduce effect bigger bins acid rain recycling household waste filters on chimneys [2] (b) Complete the following sentence. Choose from: oxygen : nitrate : untreated sewage : carbon dioxide A chemical called ______ is found in _____ and can cause water pollution when it gets into rivers. [2]

		Characteristic	>	
Pupil	Height/cm	Eye colour	Can roll tongue	-
Jane	155	Blue	Yes	-
Tom	157	Blue	No	
Orla	141	Brown	No	-
Jack	150	Blue	Yes	
rendan	149	Brown	Yes	1
				[1]
) How Dow	n's syndrome?	nes are in each ce	somes. Il of someone with	[1]
How Dow	many chromoson	nes are in each ce		[1]

2 (a) The following table provides information about some pupils in a class

rk

(a) The tar in tobacco smoke is very harmful to the body. Examiner Only Marks Remar (i) State two effects that **tar** in tobacco smoke has on the body. Choose from: causes emphysema : is addictive causes cancer : affects heart rate 1. _____ 2. _____ [2] (ii) Suggest what passive smoking is. _____[1] (b) Alcohol can also be harmful to the body. Mrs. Smith is giving her Year 11 class a talk about 'responsible' alcohol consumption. (i) State two things she could recommend as part of 'responsible' alcohol consumption. 1. _____ 2. [2] (ii) Many bars and clubs remain open much later than they used to and in the city centre do not all close at the same time. Suggest one way this could help reduce alcohol-related violence. _____[1]

3

4 Niamh carried out an investigation to check if the number of plants in a pot affected the growth of the plants.

Examiner Only

Ren

Marks

[1]

Number of plants in the pot	Average mass of each plant/g	Total mass of all the plants in each pot/g
5	28	140
10	22	220
15	17	255
20	9	180
25	4	

The table below shows some of her results.

- (a) (i) Complete the table above.
 - (ii) On the grid below, plot a line graph for the **average mass** of each plant against the number of plants in the pot.



(iii) Complete the following sentence to give a trend shown by the results.

As the number of plants in the pot increases

the _____ decreases. [1]

	(iv)	Explain fully the tre				Examiner On Marks Rem	
(b)		ductivity is a term th ne total mass of plar	•	•	this experim	ent it	
	ln v	which planting densit	y (pot) is there	e the greatest p	oroductivity?		
	Cir	cle the correct answ	er.				
	5	10	15	20	25		
						[1]	
(c)	(i)	State two things that	at Niamh woul	d have done du	uring her		
		investigation to ma			. ,		
		1					
		2				_ [2]	
	(ii)	Niamh decided to r science to do this.	epeat the exp	eriment. Sugge	st why it is g	ood	
		science to do this.				[1]	
						[']	

(a) The following diagram shows part of the carbon cycle. Examiner Only Marks Remark Carbon dioxide in the air Photosynthesis Respiration Plants Combustion Fossilisation Fossil fuels (i) Use the information provided and your knowledge to give two reasons why the level of carbon dioxide in the air has increased in recent years. _____[2] (ii) Name the environmental problem caused by increasing carbon dioxide levels. _ [1]

5

(b) The following diagram shows some pine trees growing in a forest. Examiner Only Marks Remar Pine trees keep their leaves all year round and can be grown on poorer quality soils than many of our native trees. (i) Use the information provided and your knowledge to describe and explain one environmental advantage of planting pine forests. _ [2] (ii) Unlike pine trees, oak and ash trees only have leaves in the Summer months. Suggest why pine forests have very few Spring plants such as bluebell compared to forests of oak or ash. _____[1]

(a) The following graph shows how the levels of antibody change in the 6 blood following a vaccination.

Examiner Only

Marks Remark Level of antibodies Level needed to _____ produce immunity Time/months Use only the information provided to answer parts (i) and (ii). (i) Give one reason why vaccinations for common illnesses are given to babies and young children many months before they are likely to come in contact with infections. _____[1] (ii) What is the evidence that vaccinations provide long-term protection? _____ [1] (b) Colin got the flu vaccination in September. He gets infected with the flu virus in February. Explain how the vaccination stops him getting ill. _____ [4]

(c)	(i)	Travellers to certain foreign countries have to get a number of 'travel' vaccinations before they travel.	of	Examine Marks	er Only Remark
		Explain why these travel vaccinations are necessary.			
			_ [2]		
	(ii)	Name the type of immunity that travel vaccinations provide.	_ [1]		
			_ [']		

7	(a)	Zebra mussels are an example of a competitive invasive species.	Examiner Only Marks Remark
		© Crown Copyright – Department of the Environment	
		http://archive.nics.gov.uk/env/050701b-env.htm	
		They have spread across most of the major waterways in Northern Ireland and are damaging natural habitats. Zebra mussels were accidentally introduced into Ireland as a result of human activity. They produce a sticky substance that allows them to attach to hard objects such as rocks and the bottom of boats.	
		(i) Suggest one way that man has helped zebra mussels spread to Ireland.	
		[1]	
		(ii) Name one other competitive invasive species.	
		[']	
		(iii) State two characteristics of competitive invasive species.	
		[2]	
	(b)) We can monitor the health of the environment by using abiotic and biotic information.	
		(i) What is meant by a biotic factor?	
		[1]	
		(ii) Name one organism that can be used to monitor pollution levels.	
		[1]	
		[']	

THIS IS THE END OF THE QUESTION PAPER

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