

Ce	ntre Number
71	
Can	didate Number

General Certificate of Secondary Education 2009–2010

Science: Single Award (Modular)

Staying Alive Module 1 Foundation Tier

[GSC11]



WEDNESDAY 24 FEBRUARY 2010, MORNING

TIME

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				
6				
7				

Total Marks	
Marks	

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1 Below is a diagram of a container of milk.

Examiner Only				
Marks	Remark			



(a) Milk contains a lot of calcium. Give **one** function of calcium in the body.

Choose from:

white blood cells : strong bones : red blood cells

_____[1]

(b) The label states that this milk is high in another food type. Give the name of this food type.

_____[1]

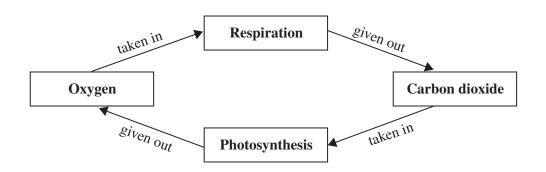
(c) Suggest a reason why this milk might be a useful addition to the diet of a pregnant woman.

_____[1]

(d) Vitamin C is also needed in the diet. Name a food that is high in vitamin C.

_____[1]

(a) The diagram below shows the gases taken in and given out during the processes of photosynthesis and respiration.



Use the **diagram** and **your knowledge** to answer parts (i) to (iii) below.

(i) Name the gas which is used in the process of respiration.

_____[1]

(ii) Complete the sentences below.

2

Plants and animals give out carbon dioxide during a process called ______. Photosynthesis uses carbon dioxide and

is only carried out by green ______. [2]

(iii) Apart from carbon dioxide, name **one** other substance used in photosynthesis.

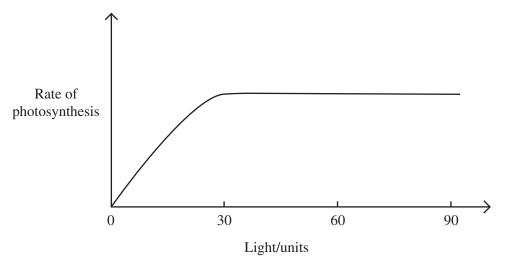
_____[1]

(b) State why humans would starve if there was no photosynthesis.

_____[1]

(c) The graph below shows how light affects the rate of photosynthesis.





Use the graph and your knowledge to complete the sentence below.

(i) As the amount of light increases between 0 and 30,

the rate of photosynthesis ______. [1]

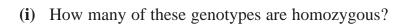
- (ii) A gardener has to decide how much light he needs in his greenhouse. He has a choice of 30, 60 or 90 units of light. The more units of light, the greater the cost.
 - 1. Which should he choose?

_____ units of light [1]

2. Explain your choice.

3	(a)	The box	below	shows	nine	genotyp	es

Pр	:	BB	:	rR	:	Bb	:	bB	:	Rr	
			pp	:	RR	:	рP				



Circle the genotype below which will give blue eyes.

[1]

(c) List the following structures in order of size, starting with the smallest.

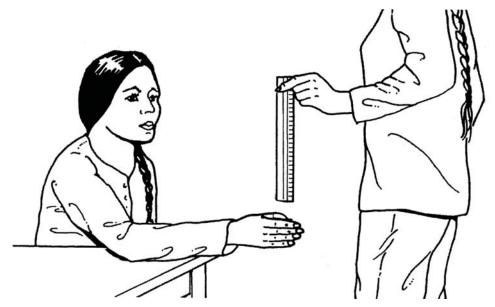
Smallest _____

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(Questions continue overleaf)

4 Two pupils are testing the speed of reactions.





© Science at Work – Body Maintenance by L Mooney & A Rivers, published by Longmans, 1992, ISBN 0582078245 The girl sitting has to catch the ruler as quickly as she can.

(a) (i) Name the type of reaction involved.

Choose from:

(ii) Name the main sense organ involved in this reaction.

_____[1]

(iii) What role do the arm muscles play in this reaction?

Choose from:

senses : effector : control

[1]

(b) The table below shows the results of the girl catching the ruler eight times.

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Marks	Remark			
	ì			

Try	1	2	3	4	5	6	7	8
Time taken/0.1 s	15	15	12	11	9			6

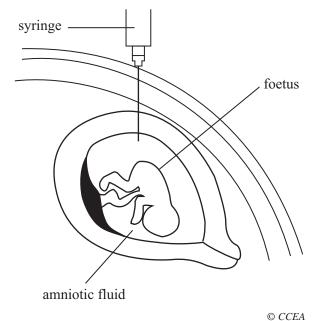
- (i) Complete the table by suggesting times for try 6 and try 7. Write your answers in the table. [1]
- (ii) Describe the difference in time taken between try 1 and try 8 and suggest a reason for this.

	[0]
	 [2]

(c) Name the two parts that make up the Central Nervous System (CNS).

and	[1]	ı
and	\mathbf{I}	1

5 The diagram below shows a foetus being tested for inherited diseases.



· ·	1
	L

(b) If the test shows that this foetus has an inherited disease, the parents will have to make an important decision. What are their options?

	[1
 	 L*



(c) Given below are issues these parents will have to consider and explanations of what they mean.

Examiner Only

Marks Remark

Use lines to match each issue with its explanation. One explanation will not be used.

Financial

Ethical

Issue	Explanation
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The cost involved in raising a child with an inherited disease

Whether something is right or wrong

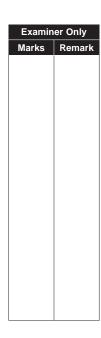
How something affects individuals and all of society

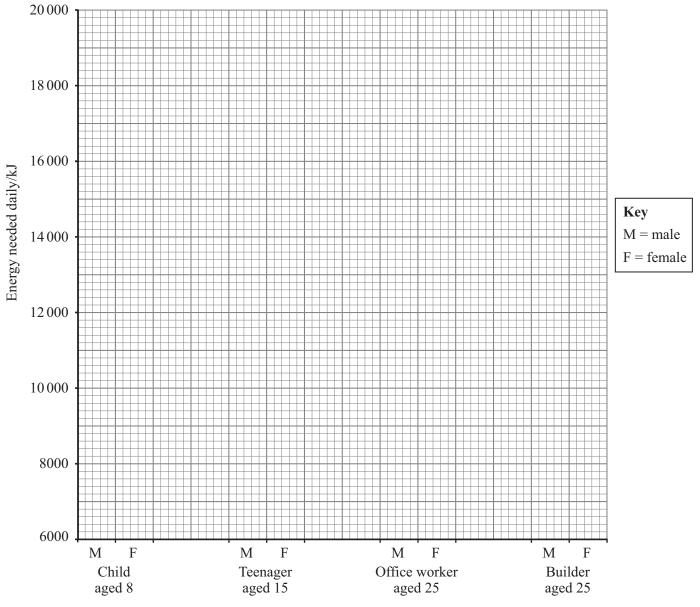
[2]

6 (a) The table below shows the daily amount of energy needed by different groups of people.

	Energy need	Energy needed daily/kJ	
Groups of people	Male	Female	
Child aged 8	8800	8800	
Teenager aged 15	12600	9600	
Office worker aged 25	11 600	9500	
Builder aged 25	20 000	12600	

(i) Draw a bar chart of these energy needs on the grid below. [2]





Groups of people

		[2]
	is some of the equipment you would use to compare the angy in crisps to the amount of energy in shredded wheat.	nount
	boiling tubes : stand : measuring cylinder :	
	forceps : Bunsen burner : thermometer	
Describ	be how you would carry out this experiment.	
Your ar (fair tes	nswer should include one thing done to make the results vast)	ılid.
		[4]

7 (a) In a TV advertisement for Flora Buttery a chef said "most people prefer the taste of Flora to that of Lurpak Lighter Spreadable".

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Marks	Remark	



© "Flora and Flora Buttery are trade marks of Unilever Plc. Image reproduced with their kind permission"



© Arla Foods Ltd

Small print at the bottom of the screen then states:

"Out of 200 people surveyed, 48% preferred Flora Buttery, 45% Lurpak Lighter Spreadable, 7% had no preference".

(i) Calculate how many more people preferred Flora to Lurpak. Show your working out.

	[2]
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[2]

The Advertising Standards Agency (ASA) concluded that the advertisement was "likely to mislead".

(11)	Use this information to suggest two reasons why the ASA reached this conclusion.

	(iii)	Give one reason why people with heart disease should use the products sparingly.	Examiner Only Marks Remar
			_[1]
(b)	And	other common disease in the UK is diabetes Type 2.	
	(i)	Give two reasons why the number of young people with diabet Type 2 is increasing.	tes
			[2]
	(ii)	Apart from heart disease, give one long-term medical problem (complication) associated with untreated or poorly controlled diabetes.	
			_[1]
_	ГНІ	S IS THE END OF THE QUESTION PAPER	

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