

71

Candidate Number

General Certificate of Secondary Education 2011–2012

Science: Single Award (Modular)

Staying Alive

Module 1

Foundation Tier

[GSC11]

TUESDAY 8 NOVEMBER 2011 1.30 pm-2.15 pm





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 six** 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.

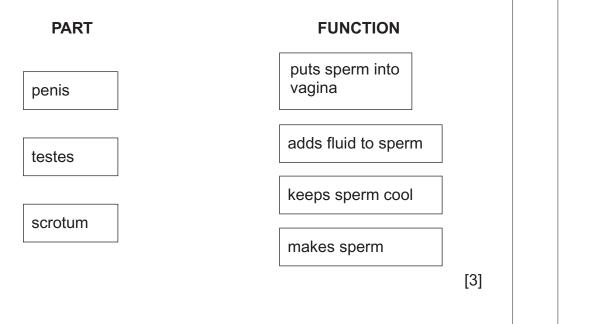


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For Examiner's use only		
Question Number	Marks	
1		
2		
3		
4		
5		
6		
Total Marks		

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1 (a) Below are parts of the male reproductive system and their functions. Use lines to link each part with its correct function.



(b) The table below describes changes that happen in boys and girls at puberty.

Complete the table by placing a tick (\checkmark) in the correct column.

Changes	Boys only	Girls only	Both
height increase			
sperm produced			
ovulation			
pubic hair grows			
voice deepens			
hips widen			

[3]

(c) Complete the sentence below.

Choose from:

males	mineral	hormone	females	vitamin
Testosterone is	a	whi	ch triggers pl	hysical changes
in	at pu	berty.		[2]

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Marks Remark

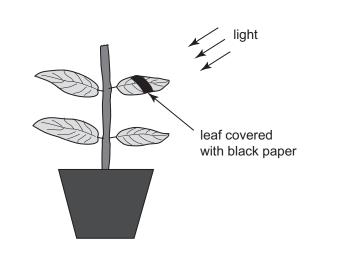
2 (a) Some pupils set up the investigation shown below to show that light is needed for a leaf to make starch.

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Marks Rema

[2]

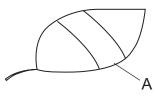
_ [1]



- (i) Their method is given below but the steps are in the wrong order.
 - A Test the leaf for starch
 - **B** Fix strips of black paper on both sides of a leaf
 - **C** Put the plant in bright light for 24 hours
 - **D** Put in a dark cupboard to destarch the plant

Using the letters **A**, **B**, **C** and **D** put the steps in the correct order.

Shown below is a leaf from the investigation. Part A shows where the black paper was placed.



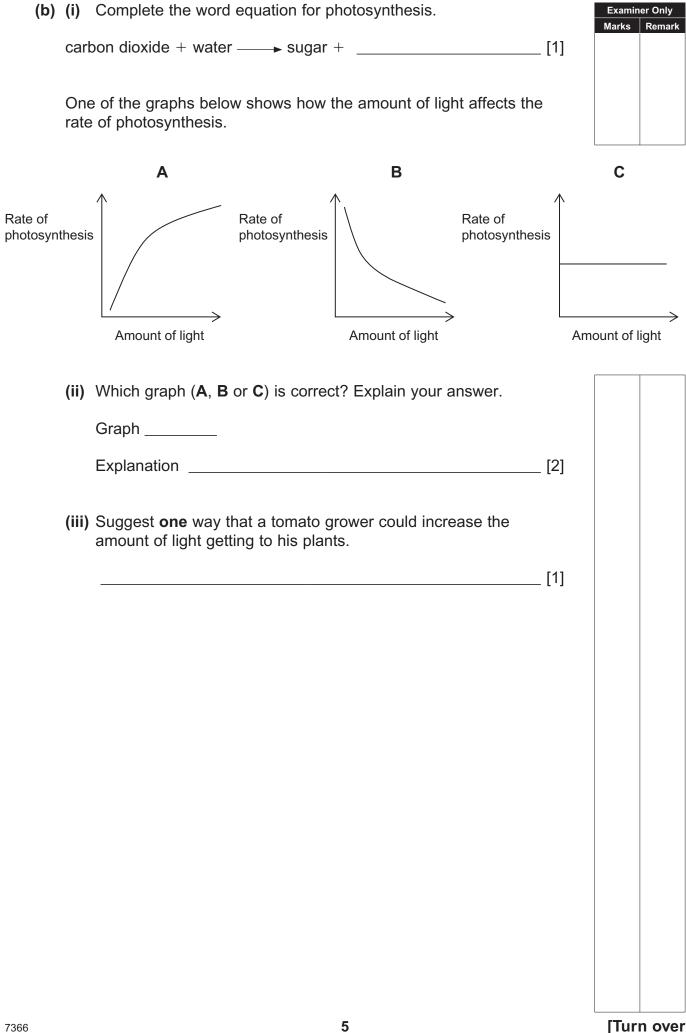
(ii) On the diagram above shade the part which has no starch. [1]

(iii) Name the chemical used to test for starch.

Choose from:

water Benedicts iodine

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3 (a) The table below shows the daily amount of energy needed by teenage and adult females.

Group	Energy/kCal
adult	2400
teenager	2800

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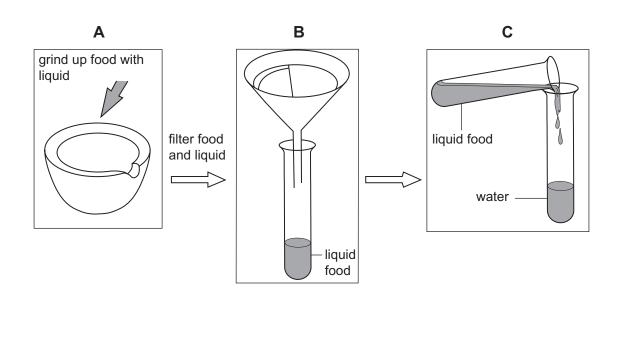
Marks Remar

(i) Calculate how much more energy the teenager needs compared to the adult.

(ii) Suggest two reasons why the teenager needs more energy than the adult.

_____ kCal [1]

- (b) The diagram below shows three steps (A, B and C) to be done when testing foods for fats.



	(i)	Name the liquid that is added to the food in step A .	Examiner Onl Marks Rema	-
		Choose from:		
		iodine alcohol milk		
		[1]		
	(ii)	What will be trapped in the filter paper at step B ?		
		Choose from:		
		food solution : liquid food : solid food		
		[1]		
	(iii)	If the liquid food contains fat what will be seen in the water at step C ?		
		[1]		
(c)	(i)	Suggest a reason why this food test could not be used to find out if smoky bacon crisps have a different amount of fat than salt and vinegar crisps.		
		[1]		
	(ii)	Suggest a reason why it is important to know how much fat is in food.		
		[1]		

4 (a) The table below shows the effect of exercise on heart rate. These results are for Jane who exercises often.

Time/min	Heart rate/ bpm
0	64
1	100
2	108
3	82
4	76
5	64

(i) Suggest **one** way that these results could have been made more reliable.

_____[1]

Examiner Only

Marks Remark

Examiner Only Marks Rei 110 100 90 heart rate/bpm 80 70 60 2 0 3 4 5 1 time/min [3] (iii) Jane started exercising at time 0 in the table. Use the information to suggest when she stopped exercising. _____ min [1] (iv) Calculate Jane's recovery time. _ min [1] (v) State how the recovery time would change for a person who didn't exercise. [1] (b) Suggest one way that the Government could encourage people to take more exercise. [1]

(ii) Plot the points and draw a line graph of Jane's results.

5	(a)	The	picture below shows cuttings of plants.		Examin Marks	er Only Remark
			© Geoff Wakeing			
		The	statements below give advice on taking cuttings.			
		A B	Select cuttings from a healthy plant. Quickly insert the cuttings into a pot containing moist compost and place in a large sealed plastic bag.			
		(i)	For each statement suggest why it is necessary to follow this advice.			
			A			
			B	[2]		
		(ii)	Taking cuttings is an example of cloning. Name the type of reproduction involved in taking cuttings.	[—]		
				[1]		
		(iii)	State two advantages of growing plants from cuttings.			
			1 2			
	(b)		gest two reasons why many people find cloning of humans cceptable.			
		1				
		2		[2]		

6 The table below shows the results of the first recorded clinical experiment carried out by James Lind to investigate cures for scurvy.

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Marks Remark

He divided ten sailors who had scurvy into five groups. They all received
the same diet but each group had a different addition as shown.

Group	Added to diet	Effect
1	Apple cider	Some improvement
2	Sulphuric acid	None
3	Vinegar	None
4	Seawater	None
5	2 oranges 1 lemon	Complete recovery

(a) Describe and explain fully the results of this investigation.

			[3]
(b)	(i)	Name the chemical reaction that takes place in all living cells.	[1]
	(ii)	Write the word equation for this reaction.	. [']
			[2]
	тні	S IS THE END OF THE QUESTION PAPER	

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