



Rewarding Learning

General Certificate of Secondary Education
2011–2012

Centre Number

71	
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Candidate Number

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Science: Single Award (Modular)

Staying Alive

Module 1

Foundation Tier

[GSC11]

TUESDAY 8 NOVEMBER 2011

1.30 pm–2.15 pm



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 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.

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.

PART	FUNCTION
penis	puts sperm into vagina
testes	adds fluid to sperm
scrotum	keeps sperm cool
	makes sperm

[3]

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

Complete the table by placing a tick (✓) 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:

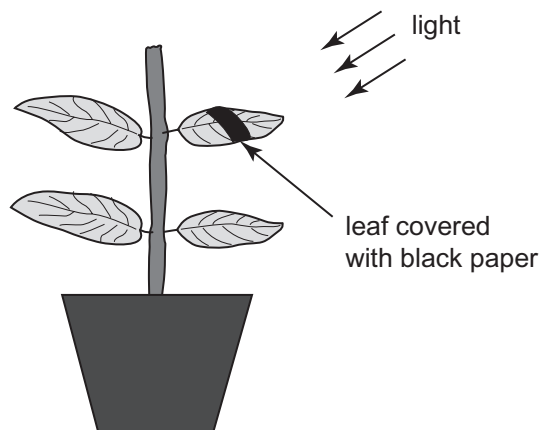
males mineral hormone females vitamin

Testosterone is a _____ which triggers physical changes in _____ at puberty.

[2]

Examiner Only	
Marks	Remark

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



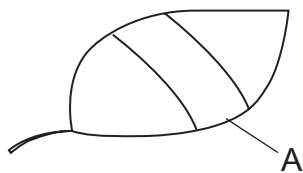
- (i) Their method is given below but the steps are in the wrong order.

- 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.

_____ [2]

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

_____ [1]

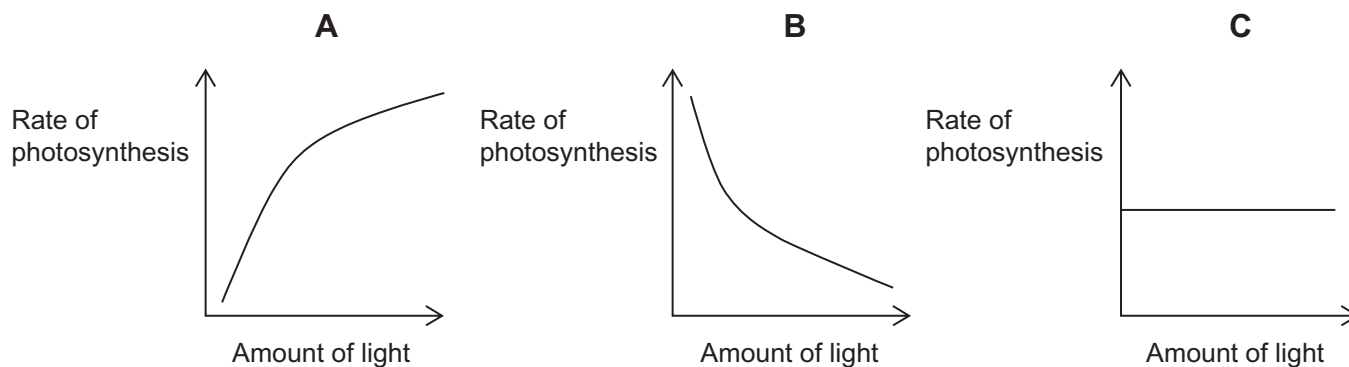
Examiner Only	
Marks	Remark

(b) (i) Complete the word equation for photosynthesis.



Examiner Only	
Marks	Remark

One of the graphs below shows how the amount of light affects the rate of photosynthesis.



(ii) Which graph (A, B or C) is correct? Explain your answer.

Graph _____

Explanation _____ [2]

(iii) Suggest **one** way that a tomato grower could increase the amount of light getting to his plants.

_____ [1]

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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

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

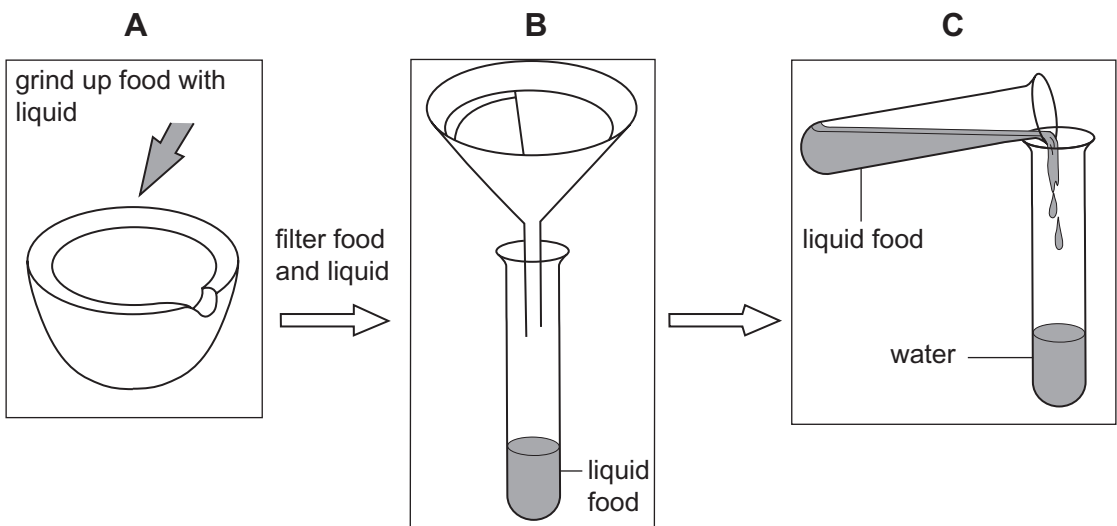
_____ kCal [1]

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

1. _____

2. _____ [2]

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



Examiner Only	
Marks	Remark

- 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

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

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]

THIS IS THE END OF THE QUESTION PAPER

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