



General Certificate of Secondary Education
2014–2015

Centre Number

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Candidate Number

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Science: Single Award

Unit 1 (Biology)
Higher Tier

[GSS12]

TUESDAY 24 FEBRUARY 2015, MORNING



TIME

1 hour 15 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 ten** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 75.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

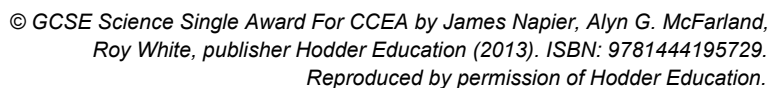
Quality of written communication will be assessed in Questions **4(a)** and **10(a)**.

For Examiner's
use only

Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Total
Marks

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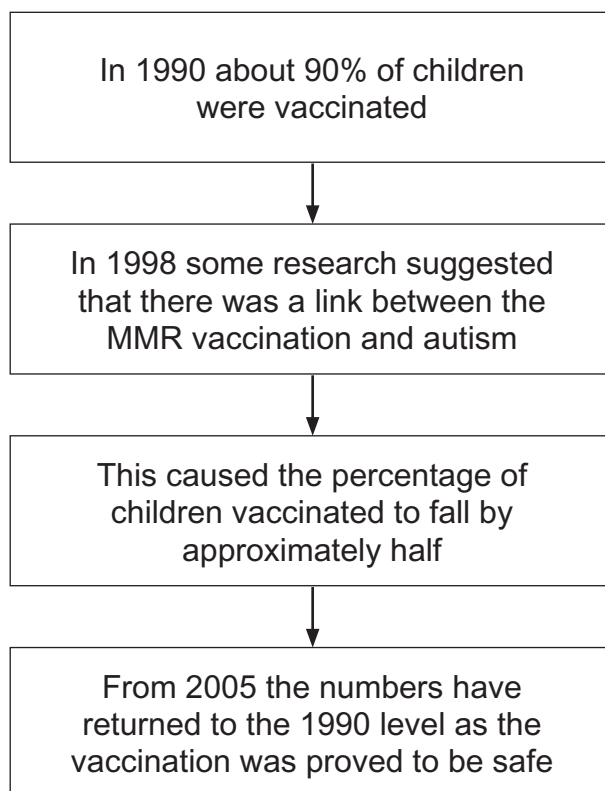


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- [3]

-
-
-
- [2]

9717.05R

- (b) The following flow chart outlines how the number of children being vaccinated for MMR changed between 1990 and the present.



- (i) Describe how the number of children having the MMR vaccination changed between 1990 and today.

[2]

- (ii) How does the information suggest that not all parents are convinced that the MMR vaccination is safe today?

[1]

- (c) Name the type of immunity produced by vaccinations.

[1]

Examiner Only	
Marks	Remark

- 2 (a)** Albinism is an inherited condition in which affected individuals are unable to make the skin pigment melanin. The melanin gives skin its colour, but more importantly, helps protect against the Sun's harmful UV rays.

Albinism is caused by a mutation in the gene that controls the production of melanin.

- (i)** Name the core component in a gene that is damaged in a mutation.

_____ [1]

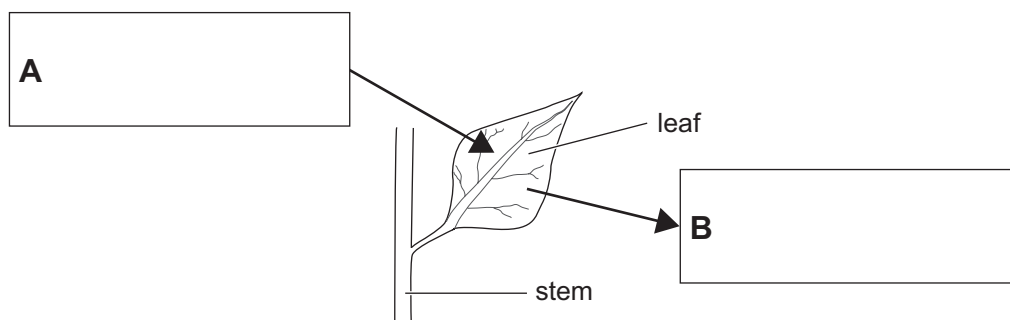
- (ii)** Explain fully why people with albinism are advised to stay out of strong sunlight.

_____ [2]

Examiner Only	
Marks	Remark

3 (a) The diagram below shows a leaf from a plant in darkness.

- (i) Complete the diagram by naming the gases that enter (A) and leave (B) the leaf during **darkness**.

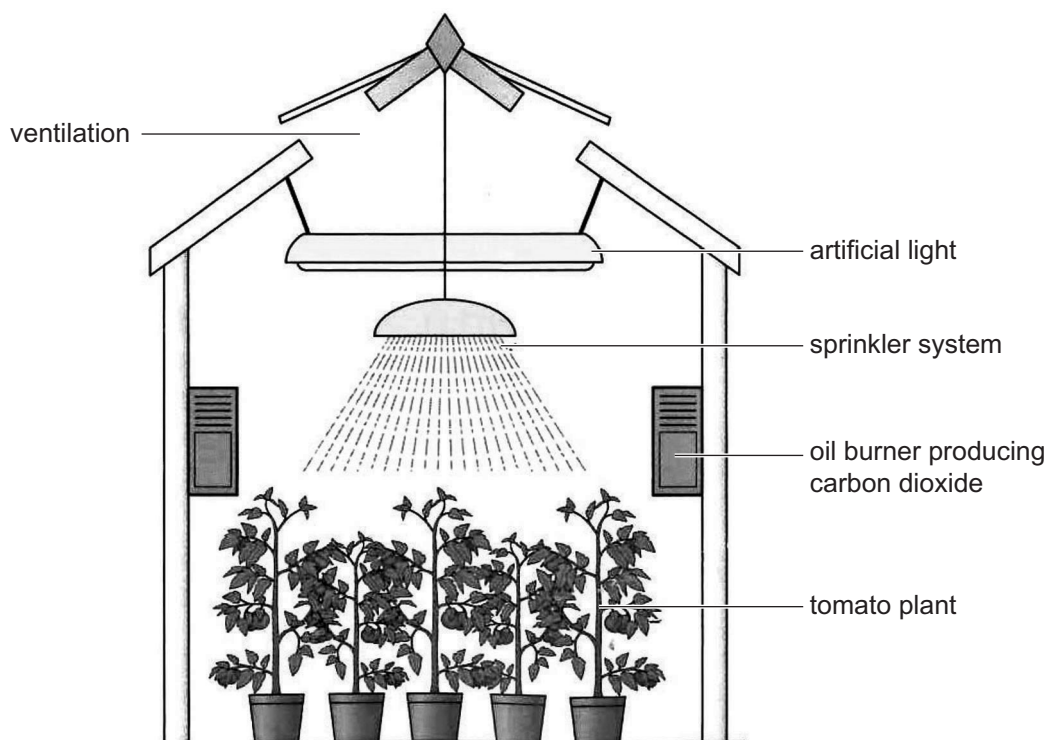


[1]

- (ii) Name the process that causes this gas exchange.

[1]

(b) The diagram below shows tomato plants growing in a glasshouse.



© GCSE Biology for CCEA by James Napier, publisher Hodder Education (2011).
ISBN: 9780340983805. Reproduced by permission of Hodder Education.

- **two** things that make the results valid (fair test)
- a description and explanation of the results you would expect.

[6]

(b) The grey squirrel is a competitive invasive species.

(i) Name **one** other competitive invasive species.

[1]

(ii) Suggest **one** feature that all competitive invasive species have in common.

[1]

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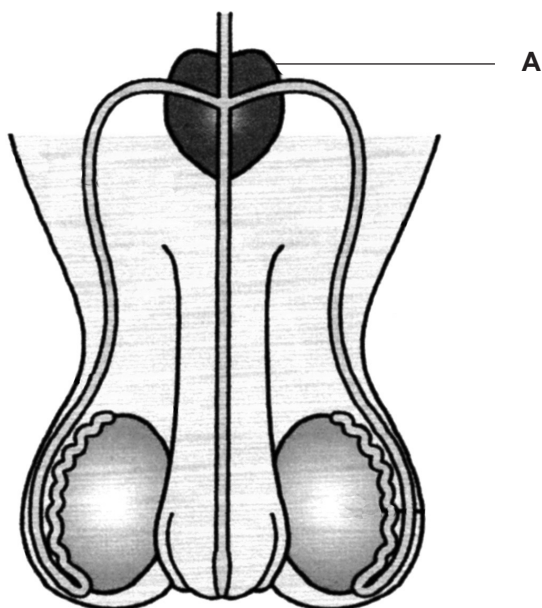
Examiner Only	
Marks	Remark

- _____ [1]

_____ % [1]

-
- [1]

-
-
-
-
- [2]



(i) Name and give the function of the structure labelled **A**.

Name _____

Function _____ [2]

(ii) Label with the letter **X**, the parts of the reproductive system that are cut during a vasectomy. [1]

Examiner Only	
Marks	Remark

(i) What is meant by the term ‘pandemic’?

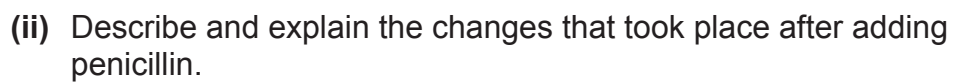
[1]

1. _____
2. _____

(i) Describe his observations that led to the discovery of penicillin.

[3]

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[3]

- (c)** There are three stages in the development of a drug before licensing.
List these stages, in order, up to the drug being licensed. [1]

_____ → _____ → _____ → licensed

Examiner Only	
Marks	Remark

[1]

[3]

[1]

[3]

16

- 10 (a)** Modern advances in genetics can provide many benefits for humans. However, new breakthroughs in this area of science raise many concerns.

Using your understanding of **genetic screening**, **gene therapy** and **GM crops**, describe and explain the benefits and problems associated with each of these developments.

In this question you will be assessed on your written communication skills including the use of specialist scientific terms.

[6]

- (b)** Advances in all areas of science are subject to peer review. State what is meant by the term 'peer review' and suggest **one** benefit it provides.

[2]

THIS IS THE END OF THE QUESTION PAPER

Examiner Only	
Marks	Remark

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