

FOR OFFICIAL USE

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G

KU PS

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Total Marks

**0300/29/01**

NATIONAL  
QUALIFICATIONS  
2012

WEDNESDAY, 23 MAY  
9.00 AM – 10.30 AM

**BIOLOGY**  
**STANDARD GRADE**  
General Level

**Fill in these boxes and read what is printed below.**

Full name of centre

Town

Forename(s)

Surname

Date of birth

Day    Month    Year

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Scottish candidate number

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Number of seat

- 1 All questions should be attempted.
- 2 The questions may be answered in any order but all answers are to be written in the spaces provided in this answer book, and must be written clearly and legibly in ink.
- 3 Rough work, if any should be necessary, as well as the fair copy, is to be written in this book. Additional spaces for answers and for rough work will be found at the end of the book. Rough work should be scored through when the fair copy has been written.
- 4 Before leaving the examination room you must give this book to the Invigilator. If you do not, you may lose all the marks for this paper.



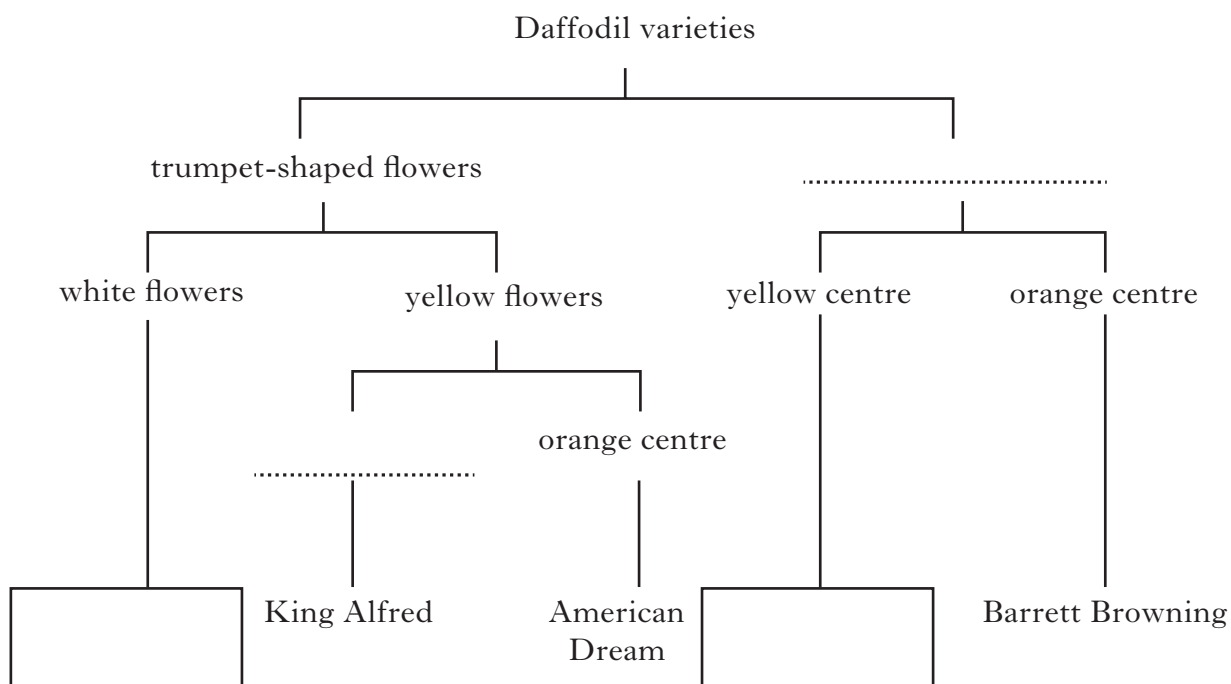


2. Some features of five varieties of daffodils are shown in the table below.

Marks

<i>Variety</i>	<i>Flower shape</i>	<i>Flower colour</i>	<i>Centre colour</i>
American Dream	trumpet	yellow	orange
Mount Hood	trumpet	white	white
Ice Follies	cup	white	yellow
King Alfred	trumpet	yellow	yellow
Barrett Browning	cup	white	orange

(a) Use the information in the table to complete the key below by writing the correct feature on each dotted line and the correct names in the empty boxes.



2

(b) Give **three** features of the American Dream daffodils.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

1

(c) Describe **one** difference between Ice Follies and Barrett Browning daffodils.

\_\_\_\_\_

\_\_\_\_\_

1

















**7. (c) (continued)**

*Marks*

- (i) What happens to the average cholesterol concentration in the blood as age increases?  
\_\_\_\_\_
- (ii) What conclusion can be drawn about average cholesterol concentration in males compared to females?  
\_\_\_\_\_
- (iii) Predict the average cholesterol concentration of females aged 50–59 years if males of that age had an average concentration of 6.8 mmol/l.  
\_\_\_\_\_ mmol/l

**1**

**1**

**1**

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**[Turn over**







10. (continued)

Marks

(d) How do identical twins form?

\_\_\_\_\_

\_\_\_\_\_

1

(e) What percentage of all twins are **non-identical**?

\_\_\_\_\_

1

(f) Which parent's family history has more influence on the chance of having non-identical twins?

\_\_\_\_\_

1

[Turn over

	KU	PS
1		
1		
1		





**11. (b) (continued)**

Marks

KU	PS
1	
1	
	1
	1

(ii) From which of the following would cell A gain oxygen by diffusion?

Tick (✓) the correct boxes.

Cell B       Cell C       tissue fluid

1

(iii) Into which of the following would glucose diffuse from cell B?

Tick (✓) the correct boxes.

Cell A       Cell C       tissue fluid

1

(c) Which cell structure controls the movement of substances into and out of cells?

\_\_\_\_\_

1

(d) What name is given to the special case of diffusion of water into or out of cells?

\_\_\_\_\_

1

**[Turn over**









Marks

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15. (a) (i) The skeleton is used for the attachment of muscles for support and movement.

Give **one other** function of the skeleton.

\_\_\_\_\_

1

(ii) One type of joint found in the body is a hinge joint.

How many planes of movement are allowed by a hinge joint?

\_\_\_\_\_

1

(iii) Give an example of a hinge joint in the body.

\_\_\_\_\_

1

(b) The following table gives information about tissue damage among athletes.

<i>Tissue</i>	<i>Injuries (%)</i>
skin	8
muscle	33
tendon	5
ligament	50
cartilage	2
bone	2











**18. (continued)**

Marks

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1	
1	

(b) During which period was there the greatest increase in production?  
Tick (✓) the correct box.

1998 – 2000

2000 – 2002

2002 – 2004

2004 – 2006

2006 – 2008

(c) What was the percentage increase in production from 1998 to 2004?

*Space for calculation*

\_\_\_\_\_ %

**[Turn over for Question 19 on Page twenty-eight**

Marks

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19. (a) Yeast is a micro-organism which carries out fermentation.

(i) Complete the following sentence by underlining the correct word in each bracket.

Yeast is a  $\left\{ \begin{array}{l} \text{single-} \\ \text{multi-} \end{array} \right\}$  celled  $\left\{ \begin{array}{l} \text{bacterium} \\ \text{fungus} \end{array} \right\}$  .

1

(ii) Alcohol is a fermentation fuel.

Name **one** other fuel that is produced by fermentation.

\_\_\_\_\_

1

(iii) What advantage is there in using fuels produced by fermentation instead of using fossil fuels?

\_\_\_\_\_

\_\_\_\_\_

1

(b) Bacteria can be genetically engineered to produce proteins that are important to humans.

Give **one** example of a protein that can be made in this way and state what it is used for.

Protein \_\_\_\_\_

1

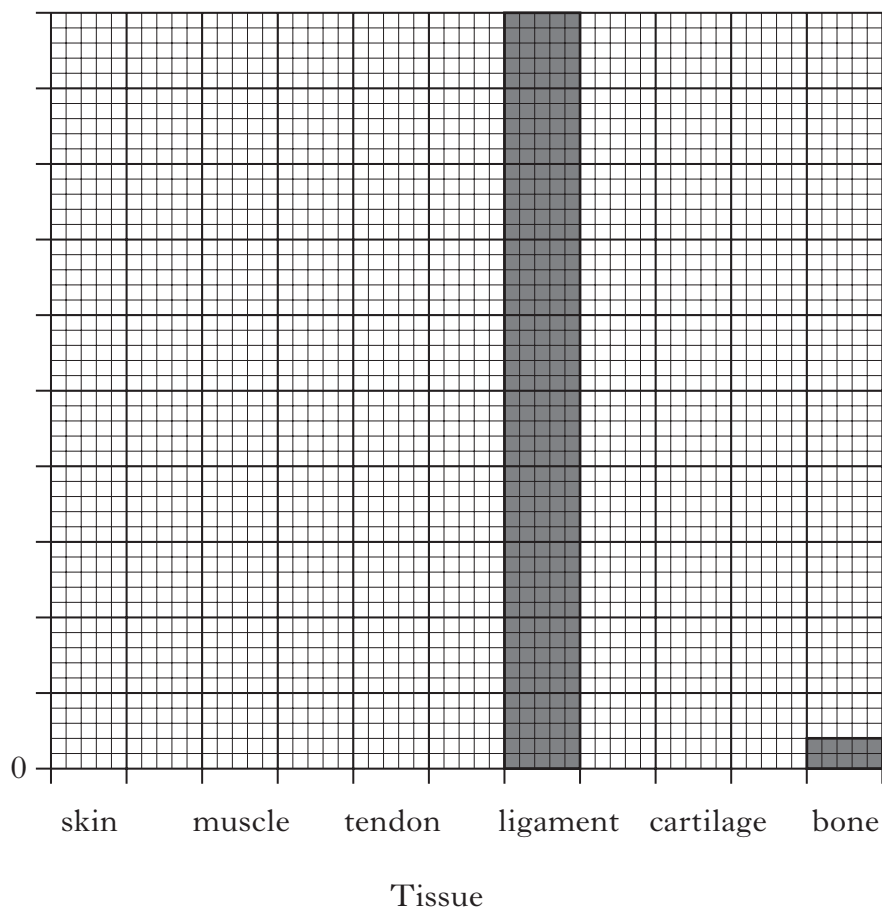
Use \_\_\_\_\_

1

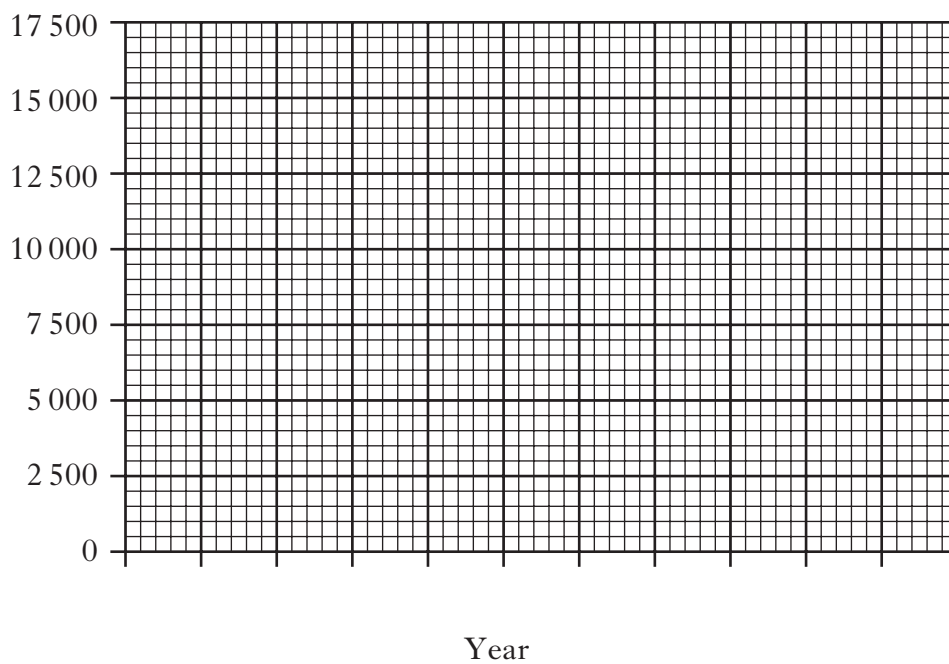
[END OF QUESTION PAPER]

SPACE FOR ANSWERS  
AND FOR ROUGH WORKING

ADDITIONAL GRID FOR QUESTION 15(b)



ADDITIONAL GRID FOR QUESTION 18(a)



SPACE FOR ANSWERS  
AND FOR ROUGH WORKING

KU	PS

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