



Rewarding Learning

General Certificate of Secondary Education
2010–2011

Centre Number

71	
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Candidate Number

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Science: Single Award (Modular)

Staying Alive
Module 1

Foundation Tier

[GSC11]



THURSDAY 19 MAY 2011, 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	



1 (a) The table below gives three food types.
Complete the table by giving the correct function for each food type.

Choose from:

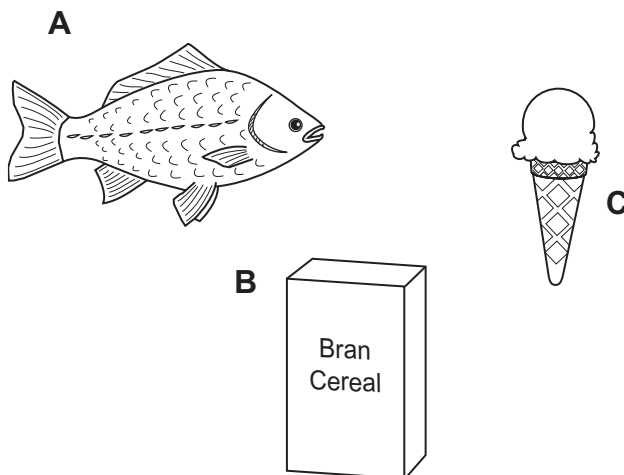
energy : growth and repair

red blood cells : prevents scurvy

Food type	Function
carbohydrate	
vitamin C	
iron	

[3]

(b) Some foods are shown below.



(i) Which food (A, B or C) contains a lot of fibre?

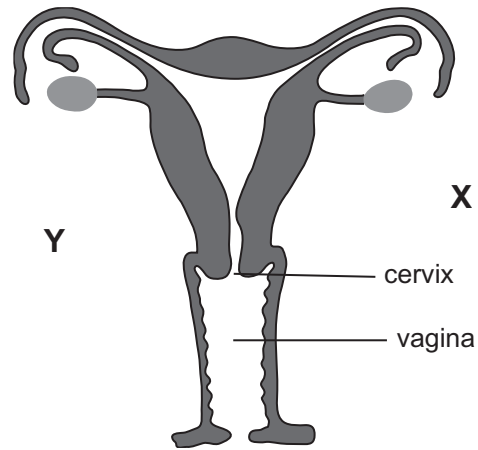
[1]

(ii) What is the function of fibre in our diet?

_____ [1]

Examiner Only	
Marks	Remark

2 (a) Below is a diagram of the female reproductive system.



(i) Draw a line from **X** to the wall of the uterus. [1]

(ii) Draw a line from **Y** to a part that produces eggs. [1]

(b) The statements below describe the journey of the sperm through the female reproductive system but not in the correct order.

- A** enters the uterus
- B** travels through the cervix
- C** travels along the oviduct
- D** enters vagina

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

— — — — [2]

Examiner Only	
Marks	Remark

(c) (i) What process must happen to an egg for pregnancy to occur?

Choose from:

dilation fertilisation contraction

_____ [1]

(ii) Name the part of the reproductive system that is cut when a woman is sterilised.

_____ [1]

(iii) Suggest a reason why a doctor might refuse this sterilisation operation to a 20 year old single woman.

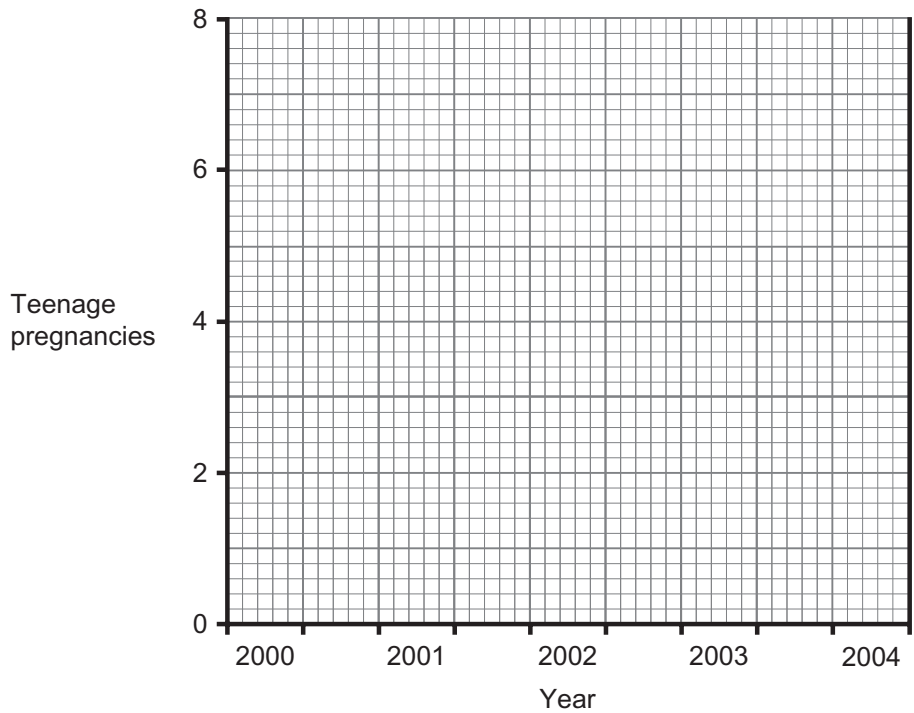
_____ [1]

Examiner Only	
Marks	Remark

3 (a) The table below contains information about the number of teenage pregnancies in a town in Northern Ireland over a five year period.

Year	2000	2001	2002	2003	2004
Teenage pregnancies	8	6	6	2	4

(i) Draw a **bar chart** of this information on the grid below.



[2]

(ii) Between which two years was there the biggest change in the number of teenage pregnancies?

_____ and _____ [1]

(iii) Complete the sentence below.

Between the years 2000 and 2004 the number of teenage pregnancies _____ [1]

(b) Name one medical condition linked to teenage pregnancy.

Choose from:

diabetes : kidney problems : obesity

_____ [1]

Examiner Only	
Marks	Remark

4 Below is a drawing of a section of DNA.



(a) (i) What name is given to the shape of DNA?

_____ [1]

(ii) What name is given to a small section of DNA?

_____ [1]

(b) DNA is formed into chromosomes which are found in the nucleus of cells. Describe how the chromosomes in egg and sperm cells (gametes) differ from all other cells.

_____ [1]

(c) Given below are nine genotypes.

<p>Aa : SS : ss : Cc : ee</p> <p>Ff : rr : RR : AA</p>
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(i) How many of these genotypes are heterozygous?

_____ [1]

(ii) How many of these genotypes contain **two** dominant alleles?

_____ [1]

Examiner Only	
Marks	Remark

(iii) If black hair is dominant to blond hair state the **phenotypes** for:

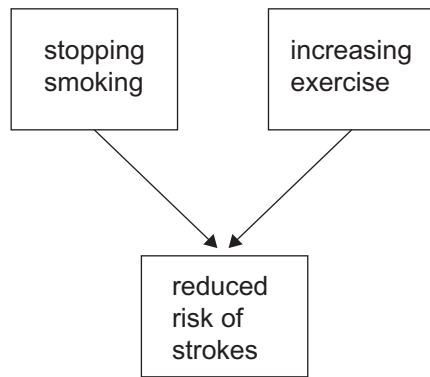
bb _____

Bb _____

[2]

Examiner Only	
Marks	Remark

5 The diagram below shows two lifestyle changes that may reduce the risk of strokes.



(a) (i) State **one** other lifestyle change that may reduce the risk of strokes.

_____ [1]

(ii) Suggest **one** reason why some people do not make these lifestyle changes even though they know the risks.

_____ [1]

(b) Regular health checks can also reduce the risk of strokes. State **one** test that may be done during a health check.

_____ [1]

(c) Below are factors which can increase the risk of heart disease and the reasons why. Use lines to link each factor with its correct reason.

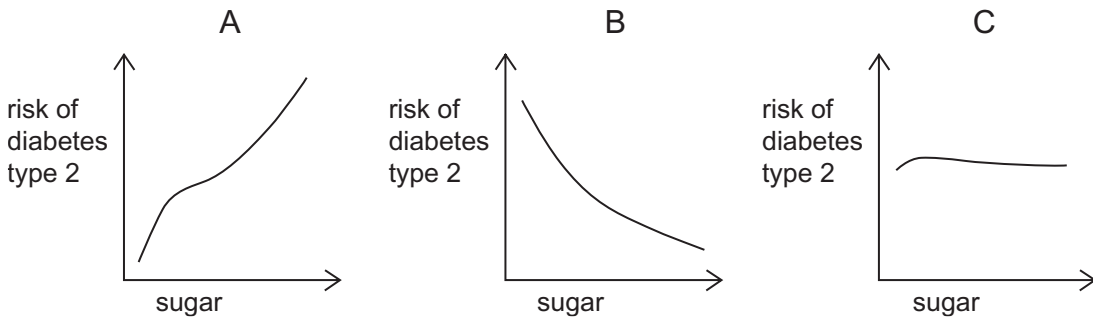
Factor	Reason
Too much salt	Blocks arteries
Too much saturated fat	Makes blood clot easily
	Increases blood pressure

[2]

Examiner Only	
Marks	Remark

(d) The risk of getting diabetes type 2 can be reduced by dietary changes.

Examiner Only	
Marks	Remark



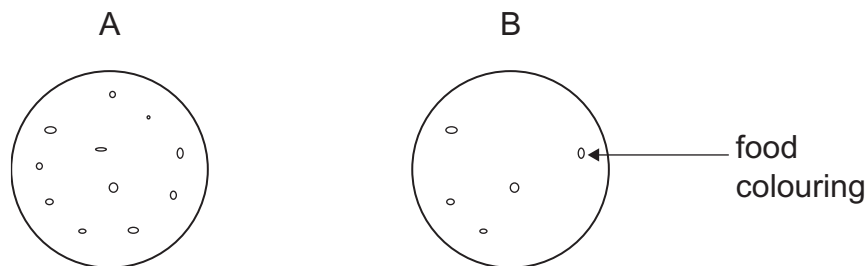
(i) Which graph (A, B or C) shows the correct relationship between diabetes type 2 and sugar intake?

_____ [1]

(ii) State one way that diabetes type 1 differs from diabetes type 2.

_____ [1]

6 To investigate their tastebuds two people (A and B) put food colouring on their tongues. A piece of filter paper was then pressed onto the tongue to pick up the colour on the tastebuds. The results are shown below.



(a) (i) State which person (A or B) has the better sense of taste and give a reason for your choice.

_____ [1]

(ii) Give two things that had to be done to ensure these results are valid.

1. _____
2. _____ [2]

(b) A tastebud is an example of a receptor. Name one **effector** in the body.

_____ [1]

Examiner Only	
Marks	Remark

(c) The child in the drawing below has just tasted lemon juice and her facial expression shows how sour it was.



Describe the role the brain played in co-ordinating her voluntary response to the sour taste.

[3]

Examiner Only	
Marks	Remark

- 7 The table below shows how much energy teenagers need to do certain activities for one hour.

Activity	Energy needed/kJ
sleeping	400
watching TV	600
walking	1200
running	2400

- (a) State **two** ways that the body uses energy when sleeping.

_____ [2]

- (b) Explain fully why the body uses the greatest amount of energy when running.

_____ [3]

- (c) Name the process which releases energy from food and state where it is carried out in the body.

_____ [2]

THIS IS THE END OF THE QUESTION PAPER

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Marks Remark

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