AQA GCSE Biology | 8461

SPECIFICATION POINT 4.2.2.6

The effect of lifestyle on some non-communicable diseases

Past-paper questions

Tier	**Foundation**
Question groups	**42**
Available paper years	**2007–2025**

Using this booklet

1. Answer the questions in order and show your working.
2. Original question numbers and marks are retained.
3. Print at actual size (100%) for measuring questions.
4. Use the companion answer booklet to check your work.

Name: _____ **Date:** _____

Whole questions are retained for context, so some parts assess other specification points. Current and legacy sources are labelled. Continue on extra paper if needed.

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 01

January 2007 | BLY1F | Original Q6 | Legacy

6 *Obesity* is a factor that affects Coronary Heart Disease (CHD).

(a) What is meant by *obesity*?

.....

.....

(1 mark)

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 01 · continued

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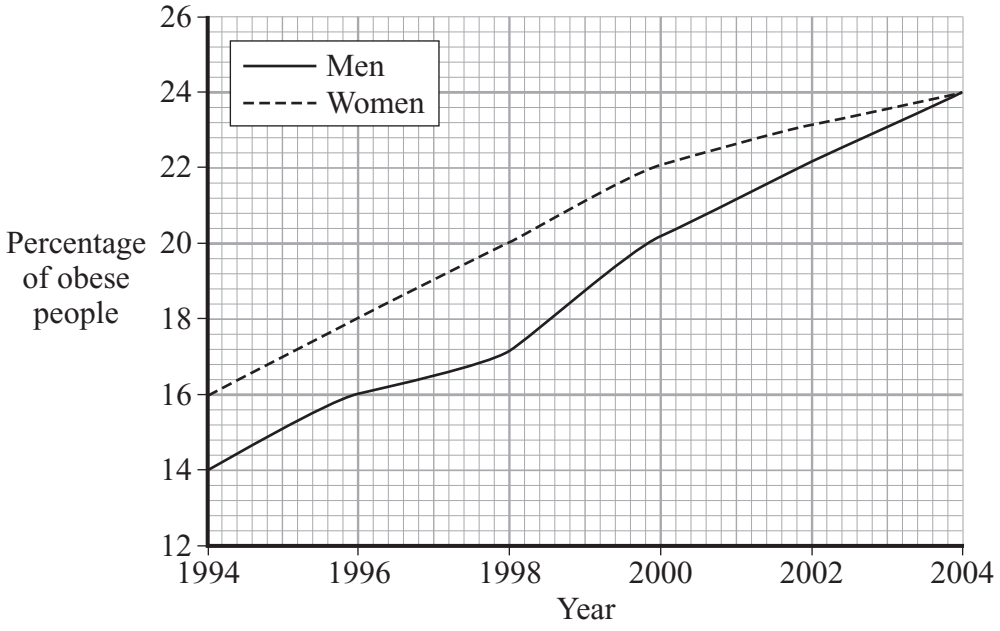
(b) The graph shows how the percentages of obese men and women in the UK changed between 1994 and 2004.



(i) Describe how the percentage of obese women changed between 1994 and 2004.

.....

.....

.....

.....

(2 marks)

(ii) The percentage of obese men changed between 1994 and 2004.

Suggest **two** reasons for this change.

1 .....

.....

2 .....

.....

(2 marks)

Question 6 continues on the next page

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 01 · continued

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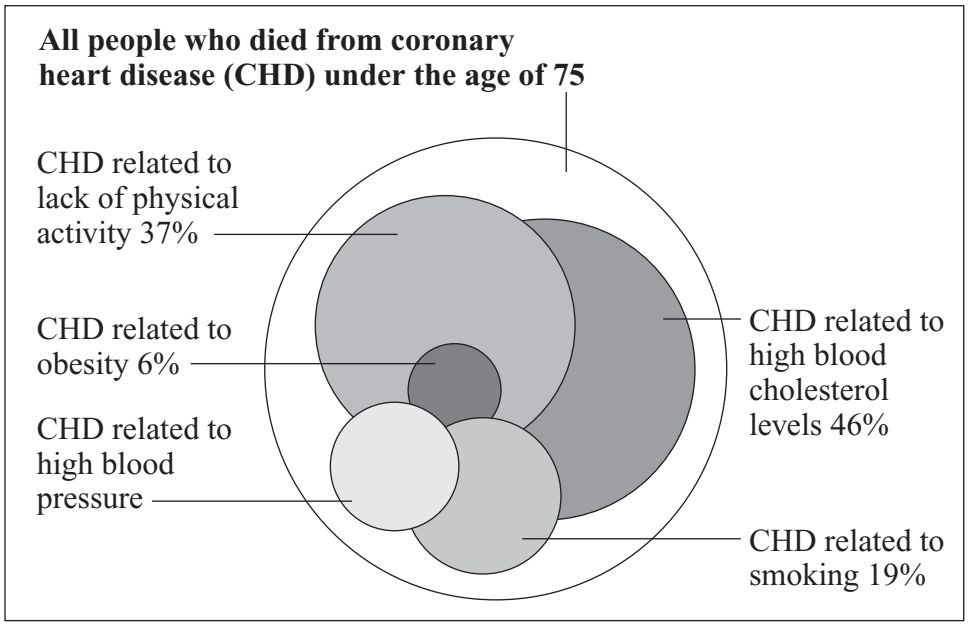
(c) The chart below is published by the British Heart Foundation. It shows how death from CHD is related to a number of different factors.



Each factor is represented by a circle.

The bigger the circle, the more people are affected by the factor.

(i) What is the main factor causing death from CHD?

.....

(1 mark)

(ii) Estimate the percentage of deaths from CHD related to high blood pressure.

..... %

(1 mark)

(iii) The data are shown as overlapping circles instead of a bar chart. The percentages of deaths related to the different factors add up to more than 100%.

What does this tell you about some of the people who died from CHD?

.....

.....

(1 mark)

8

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 02

March 2007 | BLY1A | Original Q2 | Legacy

QUESTION TWO

Disease can be caused by many different factors.

Match words, **A**, **B**, **C** and **D**, with the numbers **1–4** in the table.

A arthritis

B diabetes

C heart disease

D high blood pressure

	Factor
1	a disease in which the blood sugar level is high
2	a disease in which the joints become worn
3	a disease caused directly by too much cholesterol
4	a disease caused by too much salt in the diet

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 03

March 2007 | BLY1A | Original Q5 | Legacy

QUESTION FIVE

This question is about substances containing drugs.

Match statements, **A**, **B**, **C** and **D**, with the numbers **1–4** on the drawings.

A can be used to treat the symptoms of some diseases

B can lead to addiction to hard drugs

C contains carbon monoxide

D often leads to lack of self-control



1
Alcohol



2
Painkillers



3
Cannabis



4
Cigarette smoke

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 04

March 2007 | BLY1A | Original Q7 | Legacy

QUESTION SEVEN

The drug Bupropion has been used for many years as a treatment for depression. It was suggested that Bupropion could be used to help people to stop smoking.

Research was carried out to see if the drug did help smokers to give up smoking.

7A The suggestion that the drug could be used to help people stop smoking probably came from . . .

1 a drug company that decided to test the drug on people who smoked.

2 a scientist who thought that it might be a good idea.

3 patients who lost their craving for tobacco after being given Bupropion.

4 researchers, as a result of tests carried out on animals.

7B Trials were carried out to find out if the drug did help people to stop smoking.

Which of the following groups of volunteers would it be best to use in the trials?

1 a large group of adult smokers

2 a large group of male and female smokers suffering from depression

3 a large group of male teenage smokers

4 one large group of smokers and one large group of non-smokers suffering from depression

7C How would the drug have been used in the trial?

1 The drug would have been given to all the volunteers.

2 The drug would have been given to all the volunteers and half of them would have been told to stop smoking.

3 The drug would have been given to half the volunteers and a placebo given to the other half.

4 The drug would have been given to half the volunteers with nothing given to the other half.

4.2.2.6 The effect of lifestyle on some non-communicable diseases

7D Which of the following would make the results of the trials **less** valid?

1 the volunteers all having different weights

2 some of the volunteers developing side-effects

3 some of the volunteers suffering from depression

4 some of the volunteers using nicotine patches in addition to taking Bupropion

Turn over for the next question

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 05

June 2007 | BLY1A | Original Q9 | Legacy

QUESTION NINE

Nicotine replacement therapy (NRT) is used to help people to give up smoking.

9A Nicotine is used to help people to give up smoking because it . . .

1 is not carcinogenic.

2 is **not** the addictive substance in cigarette smoke.

3 makes smoking a cigarette distasteful.

4 removes the craving to smoke a cigarette.

Trials were carried out to assess different methods of giving NRT.
1000 people took part in each trial.
The results of these trials are shown in the table.

		Percentage of people who had given up smoking after one year	
Method of giving nicotine	**Number of trials**	**Nicotine replacement therapy**	**Control group**
Chewing gum	39	18.2	10.6
Patches	9	20.5	10.8
Nasal spray	1	21.8	9.9
Inhaler	1	15.2	5.0

9B Which method of giving NRT showed the greatest difference between people given NRT and the control group?

1 chewing gum

2 patches

3 nasal spray

4 inhaler

4.2.2.6 The effect of lifestyle on some non-communicable diseases

9C For which method of giving NRT would the results be most reliable?

1 chewing gum

2 patches

3 nasal spray

4 inhaler

9D Which would be the best way to display these results?

1 One bar chart showing the results for each method.

2 One line graph, with one line showing the results for each method.

3 Four bar charts, each bar chart showing the results for one method.

4 Four pie charts, each pie chart showing the results for one method.

END OF TEST

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 06

November 2007 | BLY1A | Original Q2 | Legacy

QUESTION TWO

Some substances can harm the body.

Match substances, **A**, **B**, **C** and **D**, with the numbers **1–4** in the table.

A cannabis

B carbon monoxide

C nicotine

D thalidomide

	Information
1	may be linked to addiction to hard drugs
2	the addictive substance in cigarette smoke
3	drug which caused many children to be born with deformed limbs
4	deprives a fetus of oxygen, causing low birth mass

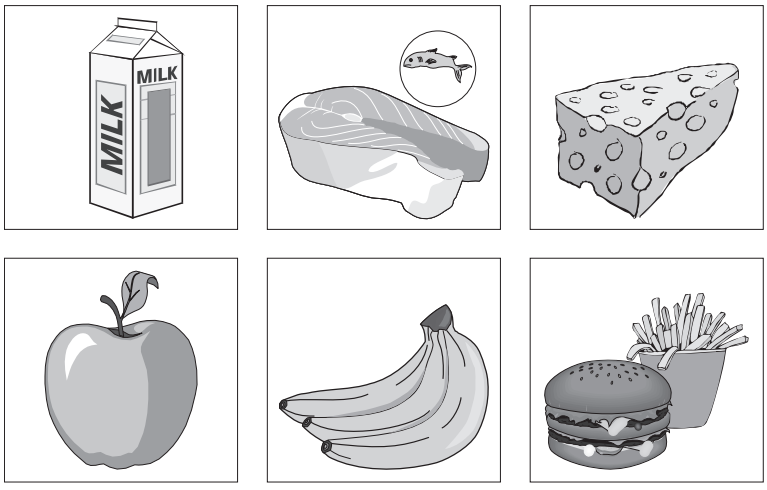
4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 07

November 2007 | BLY1A | Original Q3 | Legacy

QUESTION THREE

This question is about a healthy diet.



Match words, **A**, **B**, **C** and **D**, with the numbers **1–4** in the sentences.

A better than

B less than

C more than

D the same as

A balanced diet containing fruit and vegetables is . . . **1** . . . a diet of only burger and chips.

A person loses weight when the energy they take in is . . . **2** . . . the energy they use up.

If you want to remain the same weight, it is important that the energy in the food you eat is . . . **3** . . . the amount of energy you are using.

Exercise helps to reduce an obese person's weight by making sure that the energy they use is . . . **4** . . . the energy they take in.

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 08

November 2007 | BLY1A | Original Q7 | Legacy

QUESTION SEVEN

This question is about alcohol.

7A Which one of the following is **not** caused by drinking alcohol?

1 increased reaction time

2 diabetes

3 liver damage

4 loss of self-control

The table shows the effects of the number of drinks per hour on the percentage of alcohol in the blood for men of different body masses.

Measurements of blood alcohol concentration were collected from a large sample of men.

Number of drinks per hour	Mean percentage of alcohol in blood stream					
	Body mass in kilograms					
	55	60	70	80	90	100
1	0.04	0.03	0.02	0.02	0.02	0.02
2	0.08	0.06	0.05	0.05	0.04	0.04
3	0.11	0.09	0.08	0.07	0.06	0.06
4	0.15	0.12	0.11	0.09	0.08	0.08
5	0.19	0.16	0.13	0.12	0.11	0.09
6	0.23	0.19	0.16	0.14	0.13	0.11
7	0.26	0.22	0.19	0.16	0.15	0.13
8	0.30	0.25	0.21	0.19	0.17	0.15
9	0.34	0.28	0.24	0.21	0.19	0.19

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 08 · continued

7B What is the likely percentage blood alcohol concentration of a man with a body mass of 100 kilograms who had drunk 6 drinks in one hour?

1 0.08

2 0.09

3 0.11

4 0.13

7C What is the likely percentage blood alcohol concentration of a man with a body mass of 95 kilograms who had drunk 6 drinks in one hour?

1 0.10

2 0.11

3 0.12

4 0.13

7D The data shows that the percentage of alcohol in the blood . . .

1 is affected only by body mass.

2 is affected only by the number of drinks per hour.

3 increases with a larger number of drinks per hour and an increase in body mass.

4 increases with a larger number of drinks per hour and a decrease in body mass.

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 09

November 2007 | BLY1A | Original Q9 | Legacy

QUESTION NINE

This question is about obesity.

9A Which one of the following diseases is linked to obesity?

1 arthritis

2 brain damage

3 deficiency disease

4 lung cancer

9B One way to prevent obesity is to increase the amount of exercise that people take.

Exercise helps to prevent obesity mainly because . . .

1 exercise increases the metabolic rate.

2 exercise decreases the amount of muscle in the body.

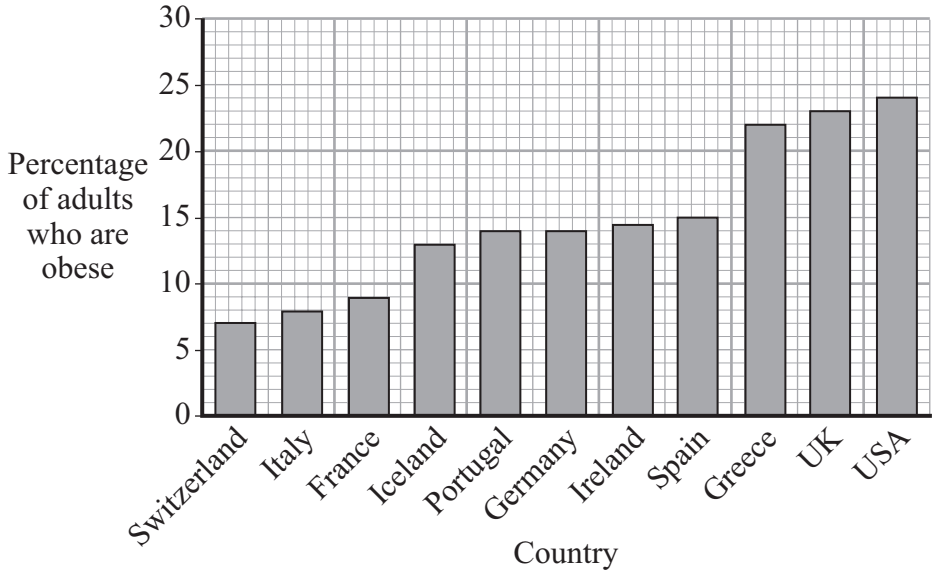
3 people have less time to eat when they are exercising.

4 people who exercise are usually fitter than those who do not.

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 09 · continued November 2007 | BLY1A | Original Q9 | Legacy

A manufacturer of slimming foods carried out a telephone survey in 11 countries to find the percentage of the population who are obese.
The results of the telephone survey of 5000 people are shown in the bar chart.



9C The information in the bar chart shows that . . .

1 people in Greece have a healthier diet than people in Ireland.

2 obesity levels are rising in all countries.

3 whether or not you are obese depends directly on where you live in the world.

4 obesity levels in the USA are three times those in Italy.

9D The information in the bar chart may be biased.

This is because . . .

1 it only considers a few countries.

2 it was gathered by a manufacturer of slimming foods.

3 the total number of people in the survey was small.

4 the survey was carried out to find the percentage of obese people, not the actual number.

END OF TEST

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 10

January 2008 | BLY1F | Original Q4 | Legacy

4 Health is affected by diet and exercise.

(a) List **A** gives the names of three conditions which affect the body.

List **B** gives information about these conditions.

Draw a straight line from each condition in List **A** to the information about it in List **B**.

List A – Condition	List B – Information
	Linked to lack of food
High blood cholesterol level	
	Linked to eating too much saturated fat
Arthritis	
	Linked to too much salt in the diet
Reduced resistance to infection	
	Linked to too much weight acting on the joints

(3 marks)

(b) Give **two** reasons why exercise is good for us.

1 .....

.....

2 .....

.....

(2 marks)

5

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 11

June 2008 | BLY1AP | Original Q3 | Legacy

QUESTION THREE

This question is about chemicals which may be taken into the body.

Match substances, **A**, **B**, **C** and **D**, with the numbers **1–4** in the table.

A alcohol

B cannabis

C carbon monoxide

D nicotine

1	may damage the liver and the brain
2	may cause reduced oxygen supply to the fetus
3	may lead to mental illness
4	an addictive chemical in cigarette smoke

4.2.2.6 The effect of lifestyle on some non-communicable diseases

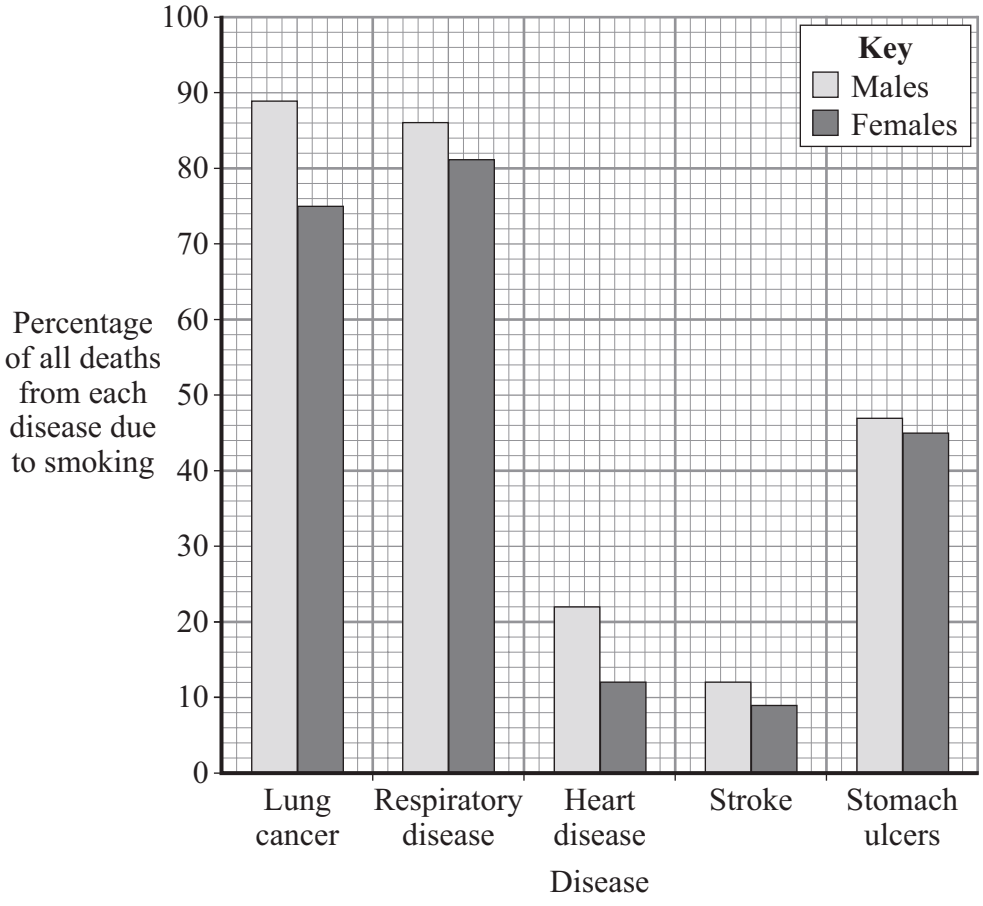
Question 12

June 2008 | BLY1AP | Original Q8 | Legacy

QUESTION EIGHT

This question is about smoking and disease.

The bar chart shows the percentages of deaths due to smoking for five different diseases.



8A In women, which disease shows the highest percentage of deaths that are thought to be due to smoking?

1 lung cancer

2 respiratory disease

3 heart disease

4 stroke

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 12 · continued

8B What percentage of deaths from respiratory disease in males is due to causes other than smoking?

1 12

2 14

3 81

4 86

8C The total number of women who died from stomach ulcers was 2220.

How many of these deaths were caused by smoking?

1 550

2 999

3 1110

4 1665

8D Which is the best conclusion that can be drawn from the bar chart?

1 Smoking causes most of the deaths due to stomach ulcers.

2 The chance of dying from any of the five diseases is increased if you smoke.

3 There is a strong link between smoking and death from heart disease.

4 The chance of dying from a stroke is not increased by smoking.

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 13

June 2008 | BLY1F | Original Q1 | Legacy

1 The drawing shows a group of people in a café.



1 (a) Use words from the box to answer the questions.

brain	**eye**	**nose**	**skin**	**tongue**

Which organ contains receptors that allow a person to:

1 (a) (i) read the newspaper .....

(1 mark)

1 (a) (ii) smell the coffee .....

(1 mark)

1 (a) (iii) feel how hot the cup is .....

(1 mark)

1 (a) (iv) taste the coffee? .....

(1 mark)

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 13 · continued

for mark

1 (b) Smoking is banned in the café.

Name **one** disease that is caused by smoking tobacco.

.....

(1 mark)

1 (c) A cigarette manufacturer increased the amount of nicotine in cigarettes by 11% between 1997 and 2006. The manufacturer did not tell the public about this change.

1 (c) (i) Suggest **one** reason why the manufacturer increased the amount of nicotine in the cigarettes.

.....

.....

(1 mark)

1 (c) (ii) Suggest **one** reason why the manufacturer did not tell the public about the change.

.....

.....

(1 mark)

7

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 14

November 2008 | BLY1AP | Original Q6 | Legacy

QUESTION SIX

This question is about food and energy.

6A Which of the following conditions is **not** linked to obesity?

1 diabetes

2 measles

3 high blood pressure

4 arthritis

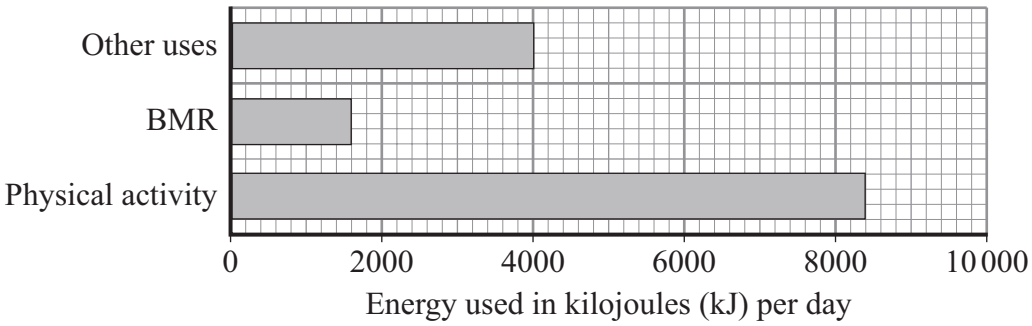
6B Which person is likely to need the least amount of food?

Person	Amount of exercise	Temperature of country where person lives
1	high	warm
2	high	cold
3	low	warm
4	low	cold

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 14 · continued

The bar chart shows the amount of energy used by a teenager.
BMR is the amount of energy needed to keep the teenager alive.



6C What is the total amount of energy used by the teenager in one day?

1 1600 kJ

2 4000 kJ

3 8400 kJ

4 14 000 kJ

6D What is likely to happen if the same teenager takes in 17 000 kJ each day?

The teenager would . . .

1 gain mass.

2 gain height.

3 become fitter.

4 be hungry all the time.

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 15

January 2009 | BLY1F | Original Q8 | Legacy

8 Nicotine is the addictive substance in tobacco.
People can be helped to stop smoking by giving them nicotine replacement therapy (NRT).

The table gives the results of trials of different types of NRT.

Type of NRT	Smokers given NRT		Smokers given placebo	
	Number of smokers in trial	Percentage of smokers who gave up smoking	Number of smokers in trial	Percentage of smokers who gave up smoking
Gum	7387	20	9319	12
Patch	7708	14	5969	8
Nasal spray	448	24	439	12
Inhaler	490	14	486	8
Tablet	243	20	245	13

8 (a) (i) What is a placebo?

.....

.....

(1 mark)

8 (a) (ii) Why was a placebo used in these NRT trials?

.....

.....

(1 mark)

8 (b) (i) In which trial was the data most reliable?

.....

(1 mark)

8 (b) (ii) Give the reason for your answer.

.....

.....

.....

(1 mark)

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 15 · continued

January 2009 | BLY1F | Original Q8 | Legacy

for mark

8 (c) (i) Which type of NRT was most effective?

.....

(1 mark)

8 (c) (ii) Explain the reasons for your answer.

.....

.....

.....

.....

.....

(2 marks)

7

Question 16

March 2009 | BLY1AP | Original Q2 | Legacy

QUESTION TWO

What we eat affects our health.

Match diets, **A**, **B**, **C** and **D**, with the statements **1–4** in the table.

A a diet low in fat

B a diet high in sugar

C a diet high in salt

D a diet high in saturated fat

1	should be avoided by a person with diabetes
2	could lead to high blood pressure
3	is suitable for someone trying to lose weight
4	might raise the level of cholesterol in the blood

4.2.2.6 The effect of lifestyle on some non-communicable diseases

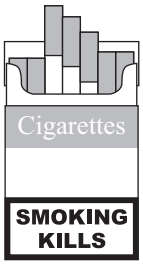
Question 17

June 2009 | BLY1AP | Original Q1 | Legacy

QUESTION ONE

The diagrams show four different drugs.

1



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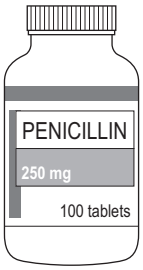

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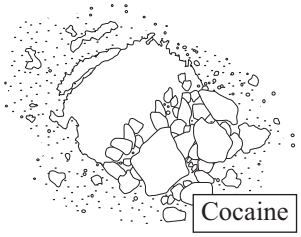

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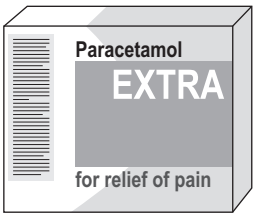


Match statements, **A**, **B**, **C** and **D**, with the drugs **1–4** in the diagram.

A kills bacteria

B linked to lung disease

C an addictive, illegal drug

D relieves some disease symptoms

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 18

June 2009 | BLY1AP | Original Q6 | Legacy

QUESTION SIX

Alcohol is a legal, recreational drug.

6A Most of the people who drink alcohol do so because . . .

1 it is highly addictive.

2 it slows down their reactions.

3 there are no risks involved in drinking it.

4 they like the effect it has on them.

6B Drinking too much alcohol for several years is most likely to cause damage to the . . .

1 blood vessels.

2 heart.

3 liver.

4 lungs.

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 18 · continued June 2009 | BLY1AP | Original Q6 | Legacy

Blood alcohol content (BAC) is measured by the percentage of alcohol in the blood.

The chart shows how blood alcohol content is related to the effects on the body and to the number of units of alcohol consumed in 1 hour.

Number of units of alcohol consumed in one hour	Effects on the body	Percentage of alcohol in the blood
10	Coma and possible death	Over 0.4
	Unconscious	0.4
9	Cannot walk unassisted. Confused. Vomits	
8	Feels sick and restless	0.3
7	Has serious lack of muscle control	
6	Feels anxious and restless	0.2
5	Has major loss of muscle control	
4	Blurred vision	
3	Some loss of balance, reaction speed and	
2	muscle control	
1	Feels good, some loss of caution	
	Loss of shyness	0.1
0		0

6C From the data in the table, a person who drank 1 unit of alcohol in one hour would . . .

1 feel good.

2 have blurred vision.

3 feel anxious.

4 need hospital treatment.

6D From the data in the table, what is the highest percentage of alcohol that a person driving a car should have in the blood?

1 0.1

2 0.2

3 0.4

4 0.5

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 19

June 2009 | BLY1AP | Original Q7 | Legacy

QUESTION SEVEN

Equal portions of four 'healthy option soups' were tested.

The table shows the energy content and some of the nutrients in these portions.

	Tomato soup	Pepper and lime soup	Pea and courgette soup	Sweetcorn soup
Energy in kJ	474	366	730	848
Total fat in g	3.61	1.57	2.14	3.01
Saturated fat in g	0.49	0.12	0.54	0.43
Cholesterol in mg	0	0	0	45.56

7A Which soup contains the most saturated fat?

1 tomato soup

2 pepper and lime soup

3 pea and courgette soup

4 sweetcorn soup

7B Which soup is the best for someone trying to lose weight?

1 tomato soup

2 pepper and lime soup

3 pea and courgette soup

4 sweetcorn soup

7C What sort of variable is the type of soup?

1 categoric

2 continuous

3 control

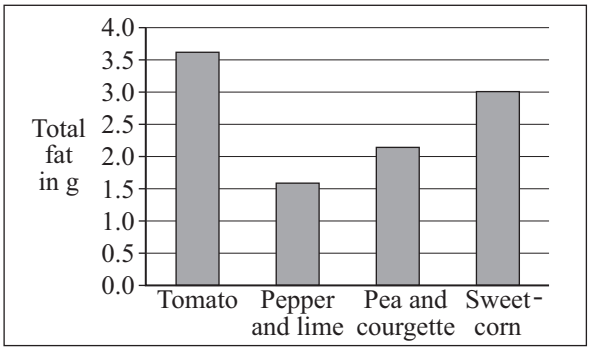
4 discrete

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 19 · continued June 2009 | BLY1AP | Original Q7 | Legacy

7D Which one of these is the best way of displaying the data about the total amount of fat in the different soups?

1



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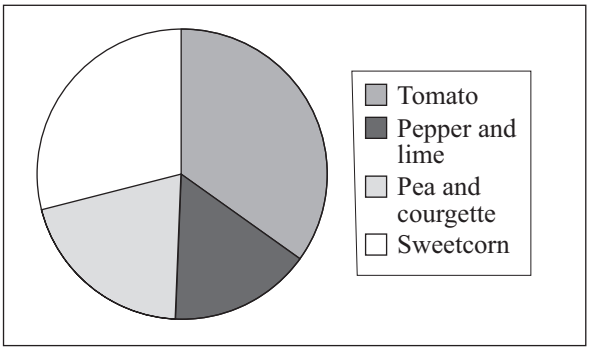

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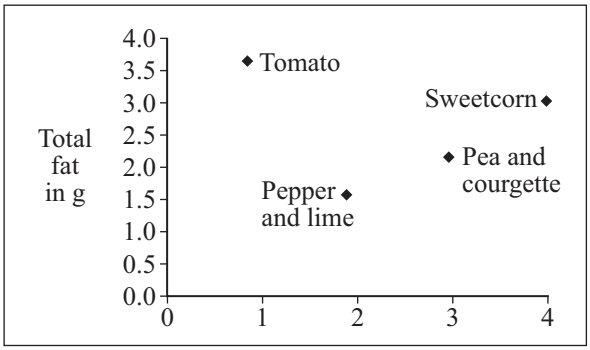

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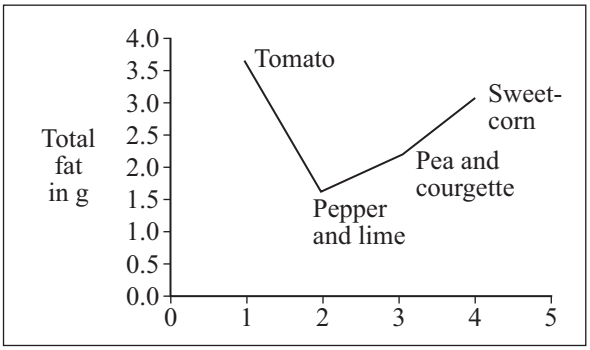


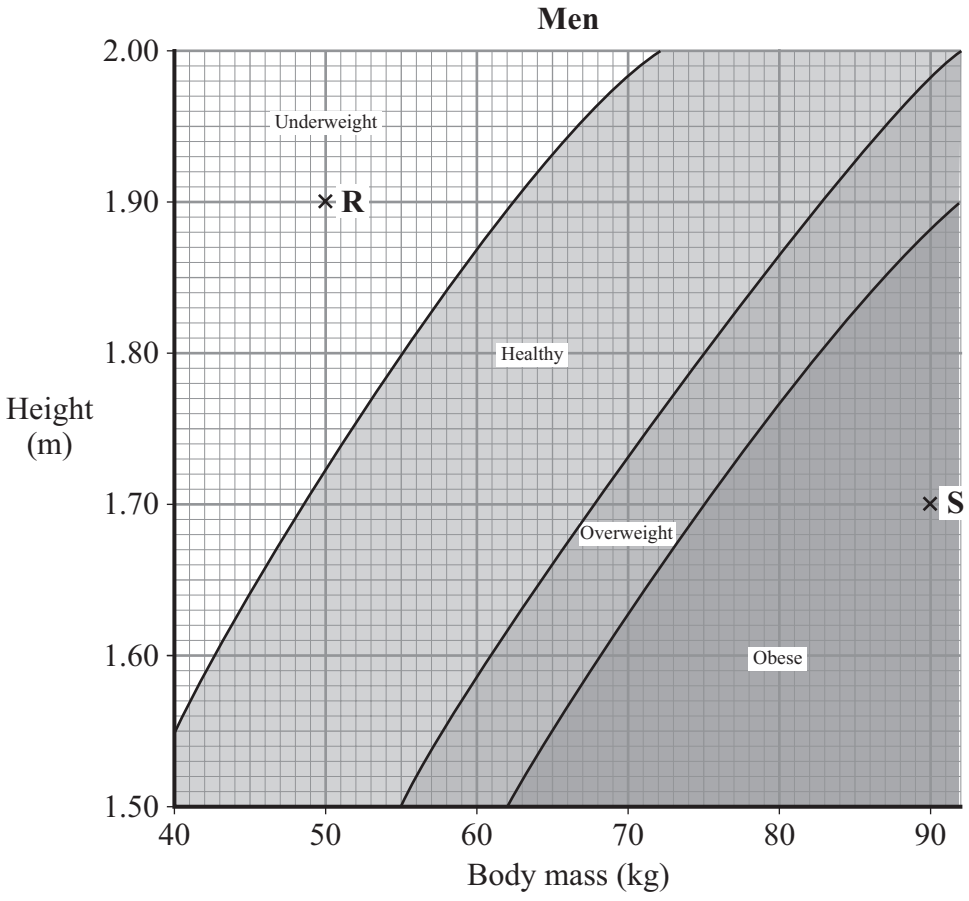
4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 20

November 2009 | BLY1AP | Original Q4 | Legacy

QUESTION FOUR

The chart is used to find if a man is underweight, healthy or overweight.



Use the chart to match figures, **A**, **B**, **C** and **D**, with the statements **1–4** in the table.

A 1.72

B 1.90

C 9.00

D 90.00

1	the height in metres (m) of man **R**
2	the mass in kilograms (kg) of man **S**
3	the minimum mass in kilograms (kg) that a 1.6 m tall man with a mass of 70 kg needs to lose to become healthy
4	the tallest in metres (m) that a 50 kg man can be to be classed as healthy

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 21

November 2009 | BLY1AP | Original Q5 | Legacy

QUESTION FIVE

Some substances can harm the body.

Match substances, **A**, **B**, **C** and **D**, with the numbers **1–4** in the table.

A alcohol

B carbon monoxide

C carcinogen

D thalidomide

	Effect on body
1	reduces the amount of oxygen carried in the blood
2	may cause liver damage
3	may cause cancer
4	may cause limb abnormalities in babies

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 22

November 2009 | BLY1AP | Original Q8 | Legacy

QUESTION EIGHT

Smoking cannabis may affect health.

8A Cannabis . . .

1 is a very addictive drug.

2 is a legal drug.

3 is a recreational drug.

4 contains nicotine.

The table shows the results of a survey about cannabis smoking and depression.

How many times cannabis was used in the past year	Men		Women	
	Number in survey	% who got depression	Number in survey	% who got depression
Fewer than 5	523	9	7	19
Between 5 and 50	60	10	46	17
1 to 4 times each week	73	12	32	31
Daily	73	15	37	68

8B 60 men in the survey used cannabis between 5 and 50 times per year.

How many of these men got depression?

1 6

2 10

3 50

4 70

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 22 · continued

8C Which pattern is shown by all the data in the table?

1 Cannabis has a greater effect on men than on women.

2 Cannabis has a greater effect on women than on men.

3 Men and women are affected equally by cannabis.

4 Increased use of cannabis always results in an increase in the percentage of users who get depression.

8D Which of the following is a true statement?

1 The data proves that smoking cannabis causes depression.

2 The data provides evidence of a link between smoking cannabis and depression.

3 The data shows that there is no link between smoking cannabis and depression.

4 There were too few people in the survey to draw a reliable conclusion.

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 23

January 2010 | BLY1F | Original Q1 | Legacy

1 The photograph shows teenagers enjoying burgers and cola at a party.



1 (a) Which part of the body contains receptors which enable a teenager to:

1 (a) (i) see the burgers

.....

(1 mark)

1 (a) (ii) smell the burgers

.....

(1 mark)

1 (a) (iii) taste the burgers?

.....

(1 mark)

Question 1 continues on the next page

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 23 · continued

for mark

1 (b) (i) A teenager drinks a can of sugary cola every day. After a year, he is likely to be 6 kg heavier than a similar teenager who drinks low-sugar cola.

Give **one** reason why.

.....

.....

.....

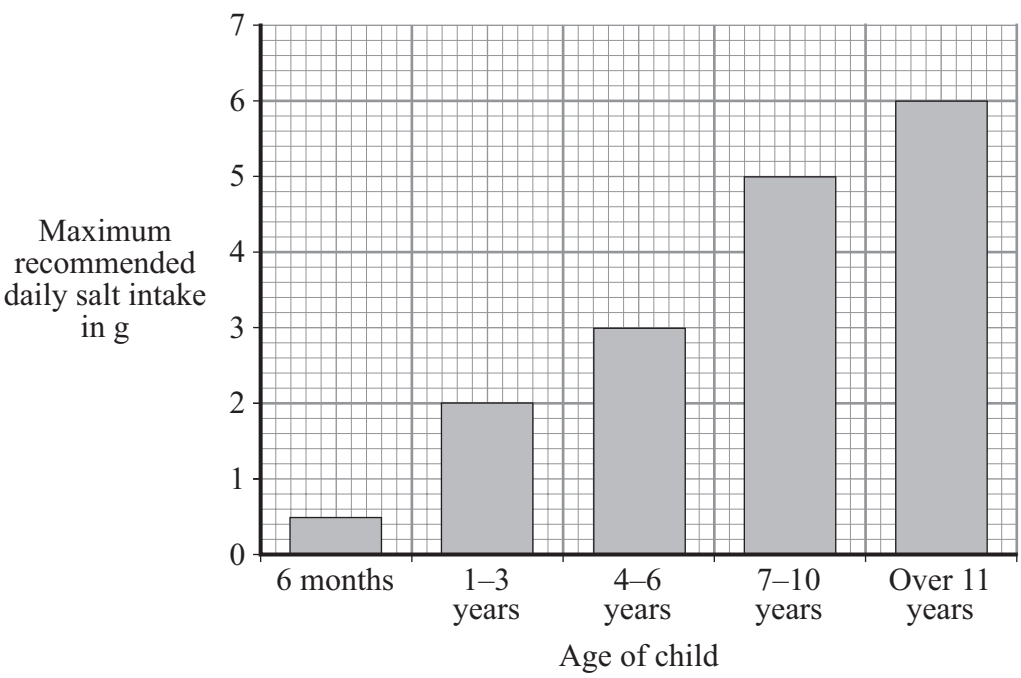
(1 mark)

1 (b) (ii) Name **one** disease linked to obesity.

.....

(1 mark)

1 (c) The graph shows the maximum recommended daily salt intake for children of different ages.



1 (c) (i) What is the maximum recommended daily salt intake for a 6 month-old child?

..... g

(1 mark)

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 23 · continued

for mark

1 (c) (ii) A 6 year-old child has burger, beans and crisps for lunch.

The table shows the mass of salt in each of these foods.

Food	Mass of salt in g
Burger	0.8
Beans	0.9
Crisps	1.4

How much more salt has the 6 year-old child eaten than the maximum recommended daily mass?

Show clearly how you work out your answer.

.....

.....

.....

..... g

(2 marks)

1 (c) (iii) Name **one** health problem linked to too much salt in the diet.

.....

(1 mark)

9

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 24

March 2010 | BLY1AP | Original Q3 | Legacy

QUESTION THREE

A balanced diet is important for a healthy body.

Match words, **A**, **B**, **C** and **D**, with the numbers **1–4** in the sentences.

A blood

B heart

C joints

D liver

Cholesterol is a substance made in the . . . **1** . . . .

Cholesterol is carried around the body by the . . . **2** . . . .

High levels of cholesterol increase the risk of disease of the . . . **3** . . . .

Obesity leads to arthritis which affects the . . . **4** . . . .

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 25

June 2010 | BLY1AP | Original Q2 | Legacy

QUESTION TWO

Obesity can increase the risk of dying early.

The graph shows the relationship between waist size in men and the risk of dying early.

A risk of 100 or less means that a person is not expected to die early.

A risk higher than 100 means that a person has a higher risk of dying early.



Match numbers, **A**, **B**, **C** and **D**, with the statements **1–4** in the table.

A 80

B 94

C 130

D 140

1	the waist size in cm of a man with a risk of 100
2	the risk of dying early for a man with a waist size of 102 cm
3	a waist size in cm of a man with a reduced risk of dying early
4	the difference in risk between a man with a waist size of 80 cm and a man with a waist size of 112 cm

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 26

November 2010 | BLY1AP | Original Q1 | Legacy

QUESTION ONE

An unhealthy lifestyle may cause illness.

The table gives information about some conditions that affect the body.

Match conditions, **A**, **B**, **C** and **D**, with the statements **1–4** in the table.

A arthritis

B diabetes

C high blood pressure

D irregular periods

	Information
1	may be caused by the effect of too much weight on joints
2	may be caused by a diet that is high in sugars
3	may be caused by not enough food in the diet
4	may be caused by too much salt in the diet

4.2.2.6 The effect of lifestyle on some non-communicable diseases

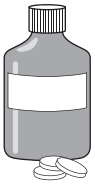
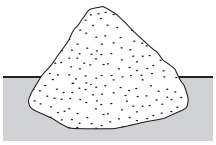
Question 27

3 Drugs affect our bodies.

3 (a) **List A** gives the names of four different substances.

List B gives information about different substances.

Draw **one** line from each substance in **List A** to the correct information about the substance in **List B**.

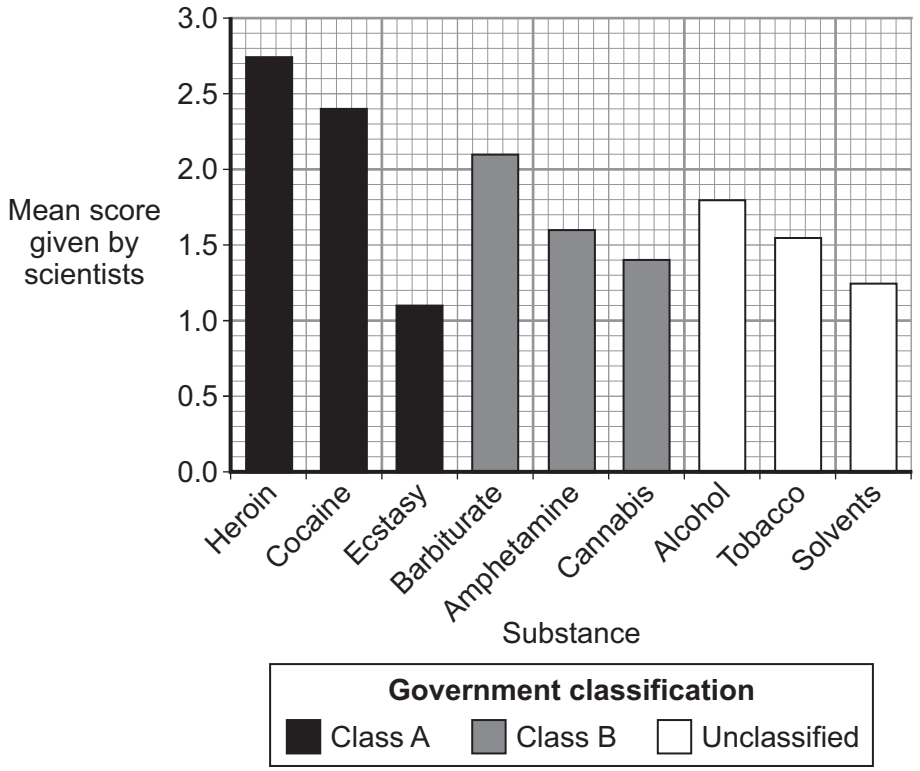
List A Substance	**List B Information**
Alcohol 	Used to treat bacterial diseases
Antibiotic 	A very addictive drug
Heroin 	May cause lung cancer
Cigarette smoke 	May cause babies to be born with abnormal limbs
	May cause liver disease

(4 marks)

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 27 · continued January 2011 | BLY1F | Original Q3 | Legacy

3 (b) A group of scientists was asked to say how much harm recreational drugs cause.
The scientists used a scale of 1–3, with 3 being the most harmful.
Their results are shown on the graph.
The government classifies drugs into three groups.
The groups are shown in the key below the graph.



3 (b) (i) Name the drug which **scientists** think is least harmful.

.....

(1 mark)

3 (b) (ii) In the government classification, class A drugs are the most harmful and unclassified drugs are the least harmful.

Does the government classification agree with the scientists' classification for **all** the drugs?

Draw a ring around your answer. **Yes / No**

Give **one** piece of evidence from the graph to support your answer.

.....

.....

(1 mark)

Question 3 continues on the next page

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 27 · continued

3 (c) Draw a ring around the correct answer to complete the sentence.

People use recreational drugs

- to cure disease.
- to prevent diseases.
- for pleasure.

(1 mark)

7

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 28

January 2011 | BLY1F | Original Q5 | Legacy

5 A balanced diet is needed to keep the body healthy.

5 (a) Obesity (being overweight) is linked to several diseases and conditions.

Which **three** of the following are strongly linked to obesity?

Tick (✓) **three** boxes.

- Diabetes ☐
- Irregular periods in women ☐
- Heart disease ☐
- Lung cancer ☐
- Arthritis ☐
- Lower resistance to infection ☐

(3 marks)

5 (b) The table gives information about six lunchtime meals.

	Meal	Energy in kilojoules	Fat in g (including saturated fat in g)	Salt in g	Sugar in g
A	Bacon double cheeseburger and regular fries	3241	40.0 (17.0)	1.4	5.0
B	3 pieces of chicken and regular fries	3626	47.1 (10.8)	3.5	1.4
C	New potato salad with smoked salmon and spinach	873	7.4 (1.5)	1.3	2.8
D	Meat feast pizza	3680	40.0 (14)	4.4	13.0
E	Poached salmon sandwich	1584	14.3 (2.3)	1.4	5.4
F	Club sandwich in Italian white bread	1380	5.4 (1.8)	2.3	5.8

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 28 · continued

5 (b) (i) Which meal, **A**, **B**, **C**, **D**, **E** or **F**, contains least sugar? ☐

(1 mark)

5 (b) (ii) Which meal, **A**, **B**, **C**, **D**, **E** or **F**, contains most energy? ☐

(1 mark)

5 (c) The recommended daily amount of fat for a woman is 80g.

A woman eats meal **D**.

What proportion of the recommended daily amount of fat does she get?

.....

.....

(1 mark)

5 (d) (i) Which meal, **A**, **B**, **C**, **D, E** or **F**, is the healthiest? ☐

(1 mark)

5 (d) (ii) Give **two** reasons for your answer.

1 .....

.....

2 .....

.....

(2 marks)

9

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 29

June 2011 | BLY1AP | Original Q6 | Legacy

QUESTION SIX

This question is about the effect of obesity on health and life expectancy.

6A Which of these diseases is linked to obesity?

1 measles

2 heart disease

3 lung cancer

4 leprosy

A study was carried out to see if there was a link between waist size and early death.

The waist sizes of 200 000 men were checked for ten years. Over the ten years, the men had a normal lifestyle.

7000 of these men died during the study.

6B Which factor was controlled in this study?

1 waist size

2 diet

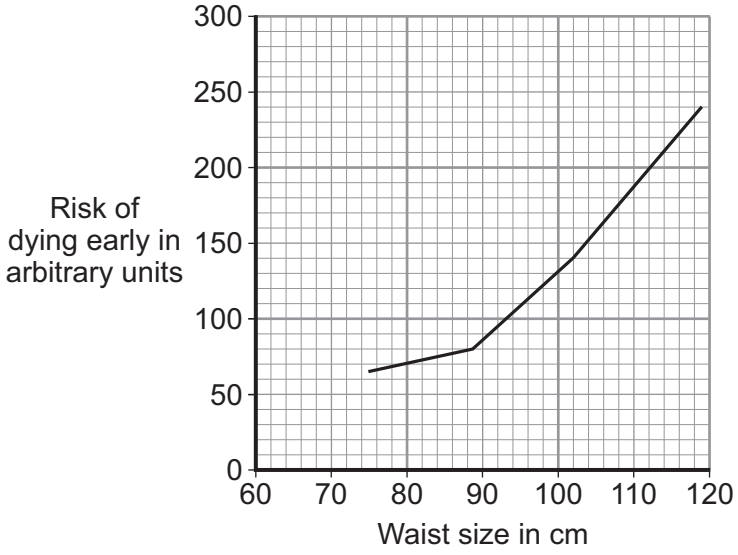
3 gender

4 exercise

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 29 · continued June 2011 | BLY1AP | Original Q6 | Legacy

The graph shows the results of the study. A risk of 100 means that the person has a normal life expectancy. A risk greater than 100 means that the person has a lower than normal life expectancy.



6C From the graph, what waist size is linked to a normal life expectancy?

1 76 cm

2 84 cm

3 93 cm

4 112 cm

6D The graph shows that . . .

1 a man with a waist size of 110 cm will die before a man with a waist size of 90 cm.

2 increasing body mass in men increases the risk of dying early.

3 more men have larger waist sizes.

4 increasing waist size in men increases the risk of dying early.

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 30

June 2011 | BLY1AP | Original Q7 | Legacy

QUESTION SEVEN

Several factors affect the risk of heart disease.

The table shows how different occupations and the risk factors for heart disease are linked.

Risk factor	Percentage of occupational group at risk of heart disease				
	Professional	Semi-professional	Self-employed	Semi-skilled	Unskilled
Smoking	18	22	26	28	35
Less than 30 minutes of exercise per week	28	30	28	30	35
Drinking over 4 units of alcohol per day	34	37	34	36	34
Drinking over 8 units of alcohol on at least one day per week	18	19	18	20	18
High blood pressure	25	27	25	29	28
High total cholesterol	66	65	67	65	60
Being overweight	43	43	38	39	39
Obesity	21	20	27	24	23

7A Which occupational group take least exercise on average?

1 professional

2 semi-professional

3 semi-skilled

4 unskilled

7B Which risk factor affects all occupational groups the most?

1 smoking

2 drinking over 4 units of alcohol per day

3 high total cholesterol

4 obesity

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 30 · continued

7C For which risk factor is there the least variation between the different occupational groups?

1 smoking

2 drinking over 8 units of alcohol on at least one day per week

3 high blood pressure

4 being overweight

7D To which occupational group would it be best to target an anti-smoking campaign?

1 professional

2 semi-professional

3 self-employed

4 unskilled

Turn over for the next question

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 31

January 2012 | BL1FP | Original Q6 | Legacy

6 Nicotine is a drug in tobacco smoke. Smoking tobacco is harmful.

6 (a) (i) Many smokers find it difficult to stop smoking.

Complete the sentence.

It is difficult to stop smoking because nicotine is very ..... .

(1 mark)

6 (a) (ii) Nicotine affects synapses in the brain.

What is a synapse?

.....

.....

(1 mark)

6 (b) A drug company has developed a new drug, Drug **A**, to help people stop smoking.

Doctors tested the drug in a double-blind trial with over 2000 volunteers who were smokers.

The volunteers wanted to stop smoking.

The volunteers were divided into three groups. Each volunteer took a tablet once a day for 12 weeks:

- group 1 took Drug **A**
- group 2 took Drug **B** (a drug already in use to stop people smoking)
- group 3 took a placebo.

The smoking habits of each group were recorded for a year.

6 (b) (i) What is a placebo?

.....

(1 mark)

6 (b) (ii) Why is a placebo group used in drug trials?

.....

.....

(1 mark)

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 31 · continued January 2012 | BL1FP | Original Q6 | Legacy

6 (b) (iii) Which people knew what was in each tablet, in this trial?

Tick (✓) **one** box.

Both doctors and volunteers ☐

Doctors but not volunteers ☐

Neither doctors nor volunteers ☐

(1 mark)

6 (b) (iv) It is important that the three groups of volunteers should be similar.

Give **two** factors that should be similar in the groups of volunteers.

1 .....

2 .....

(2 marks)

6 (c) The table shows the results of the trials.

Tablet	Percentage of volunteers who had stopped smoking	
	After 12 weeks	After 1 year
Drug **A**	44	23
Drug **B**	30	15
Placebo	18	10

A doctor looked at the results of the tests.

The doctor suggested that a smoker who wanted to give up smoking should use Drug **A**.

Why?

.....

.....

(1 mark)

8

4.2.2.6 The effect of lifestyle on some non-communicable diseases

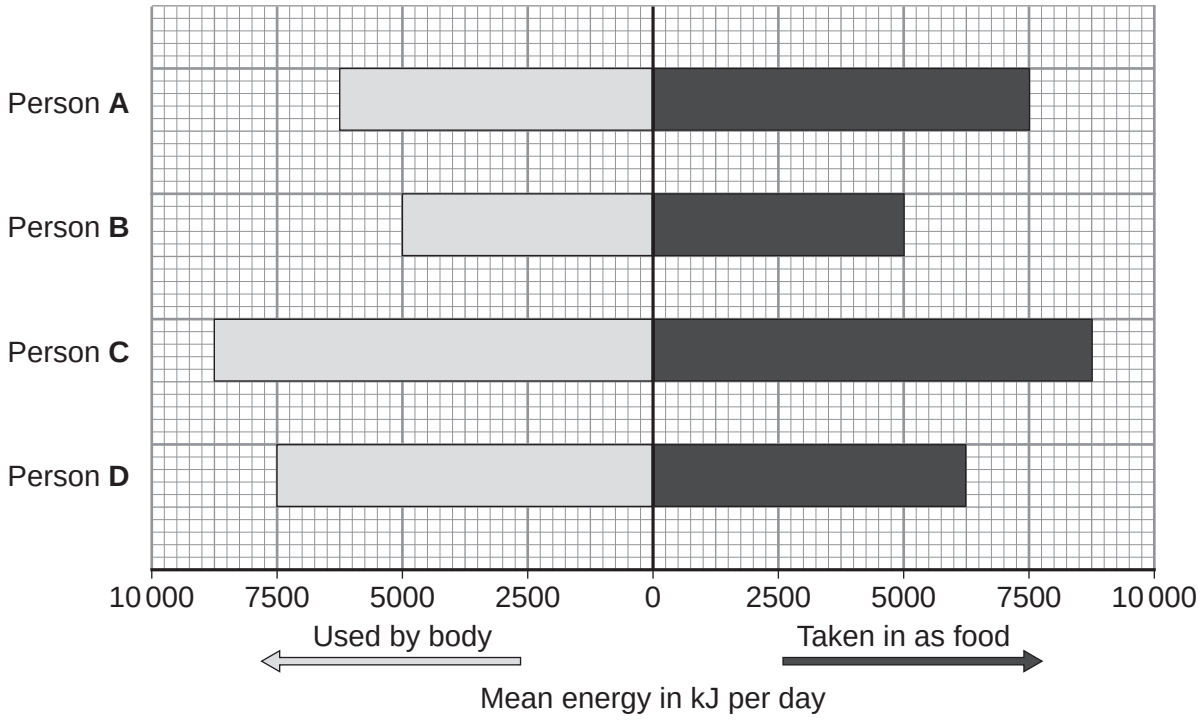
Question 32

June 2012 | BL1FP | Original Q2 | Legacy

2 Scientists measured the amount of energy used by four people, **A**, **B**, **C** and **D**.

The scientists also measured the amount of energy taken in as food by each person.

The chart shows the scientists' results.



2 (a) (i) What was the mean amount of energy used by **D**?

..... kJ per day
(1 mark)

2 (a) (ii) The amount of energy used by **D** is different from the amounts of energy used by **A**, **B** and **C**.

Suggest **two** reasons why.

.....

.....

.....

.....
(2 marks)

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 32 · continued

2 (b) The data in the bar chart was collected over twelve months.

Which person, **A**, **B**, **C** or **D**, would gain body mass over the twelve months? ☐

Give a reason for your answer.

.....

.....

.....

.....

(2 marks)

2 (c) In the UK many people are obese.
Doctors advise obese people to lose mass.

Suggest **two** different ways an obese person could lose mass.

.....

.....

.....

.....

(2 marks)

7

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 33

January 2013 | BL1FP | Original Q5 | Legacy

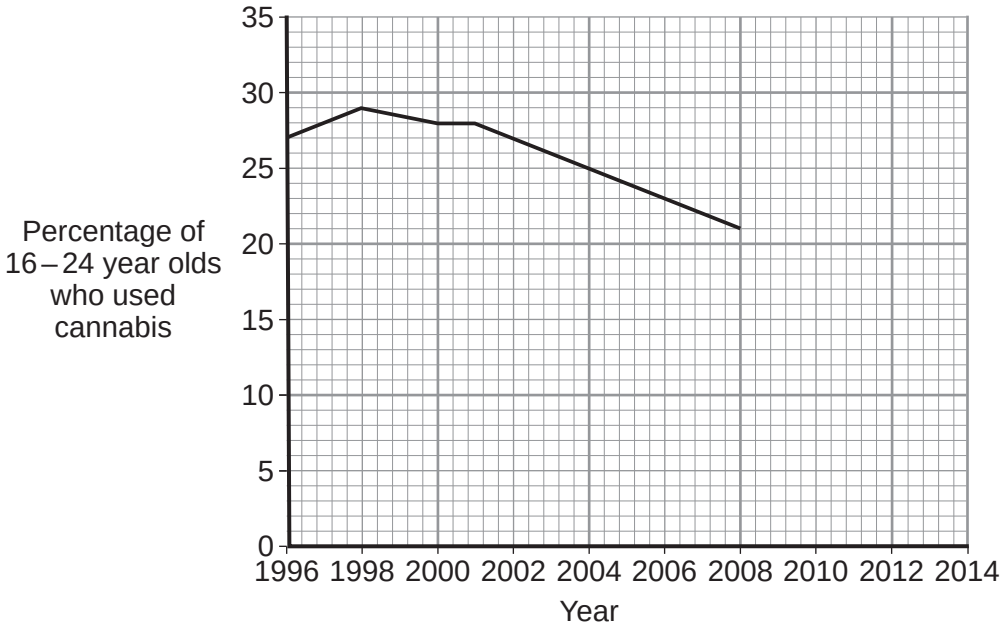
5 Cannabis is an illegal drug.

5 (a) What type of illness might be caused by smoking cannabis regularly?

.....

(1 mark)

5 (b) The graph shows the use of cannabis by 16–24 year olds in the UK between 1996 and 2008.



5 (b) (i) Use the graph to predict the percentage of 16–24 year olds who will use cannabis in 2014.

Show your working **on the graph**.

Percentage = ...

(2 marks)

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 33 · continued

5 (b) (ii) Illegal drugs are classified as Class A, Class B or Class C.
Class C drugs are the least dangerous.

In 2004, the government changed the classification of cannabis from Class B to Class C.

In 2009, the government changed the classification of cannabis back from Class C to Class B.

Do you think that changing the classification of cannabis back to a Class B drug will reduce the percentage of 16 – 24 year olds who use cannabis?

Use evidence from the graph to explain your answer.

.....

.....

.....

.....

.....

.....

(2 marks)

5

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 34

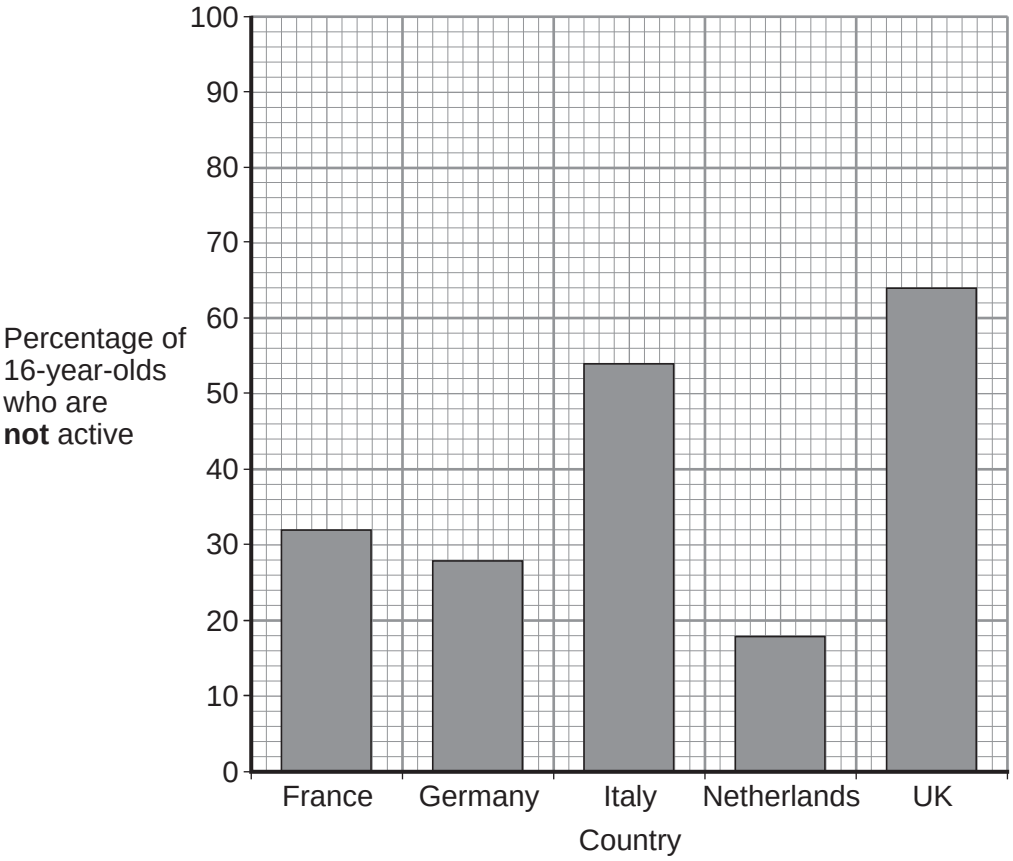
June 2015 | BL1FP | Original Q2 | Legacy

2 Scientists investigated the effect of different factors on health.

2 (a) People who are **not** active may have health problems.

Figure 3 shows the percentage of 16-year-olds in some countries who are **not** active.

Figure 3



2 (a) (i) What percentage of 16-year-olds in the UK are **not** active?

[1 mark]

..... %

2 (a) (ii) What percentage of 16-year-olds in the UK are **active**?

[1 mark]

..... %

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 34 · continued June 2015 | BL1FP | Original Q2 | Legacy

2 (a) (iii) A newspaper headline states:

People in the UK are the laziest in the world.

Information in **Figure 3** does **not** support the newspaper headline.

Suggest **one** reason why the newspaper headline may be wrong.

[1 mark]

.....

.....

2 (b) Doctors gave a percentage rating to the health of 16-year-olds.
100% is perfect health.

Table 2 shows the amount of exercise 16-year-olds do and their health rating.

Table 2

Amount of exercise done in minutes every week	Health rating as %
Less than 30	72
90	76
180	82
300	92

What conclusion can be made about the effect of exercise on health?

Use information from **Table 2**.

[1 mark]

.....

.....

Question 2 continues on the next page

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 34 · continued

2 (c) Inherited factors can also affect health.

Give **one** health problem that may be affected by the genes someone inherits.

Draw a ring around the correct answer.

[1 mark]

being malnourished	**having a high cholesterol level**	**having a deficiency disease**

2 (d) White blood cells are part of the immune system.

Use the correct answer from the box to complete each sentence.

antibiotics	**antibodies**	**pathogens**	**vaccines**

2 (d) (i) When we are ill, white blood cells produce ..... to kill microorganisms.

[1 mark]

2 (d) (ii) Many strains of bacteria, including MRSA, have developed resistance to drugs called ..... .

[1 mark]

7

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 35

June 2016 | BL1FP | Original Q7 | Legacy

7 Nicotine and alcohol are drugs that affect the brain.

7 (a) (i) What is the correct description of both nicotine and alcohol?

[1 mark]

Tick (✓) **one** box.

illegal, medical drugs ☐

illegal, recreational drugs ☐

legal, medical drugs ☐

legal, recreational drugs ☐

7 (a) (ii) Why do people find it difficult to stop smoking?

[1 mark]

_____

_____

7 (b) A drug company has developed a new drug which helps people to stop smoking. The new drug prevents the feeling of pleasure caused by nicotine in the smoke.

The new drug is now being tested on rats which have been given a lot of alcohol to drink.
The company wants to find out if the drug can help people to stop drinking alcohol.

7 (b) (i) It is important that the tests on rats are done by an independent company.

What is meant by an independent company?

[1 mark]

_____

_____

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 35 · continued

7 (b) (ii) Why is it important that the tests are done by an independent company?

[1 mark]

7 (b) (iii) Some scientists believe that the part of the brain sensitive to alcohol is the same as the part of the brain sensitive to nicotine.

Explain why the new drug might be useful for treating people who find it difficult to stop drinking alcohol.

[2 marks]

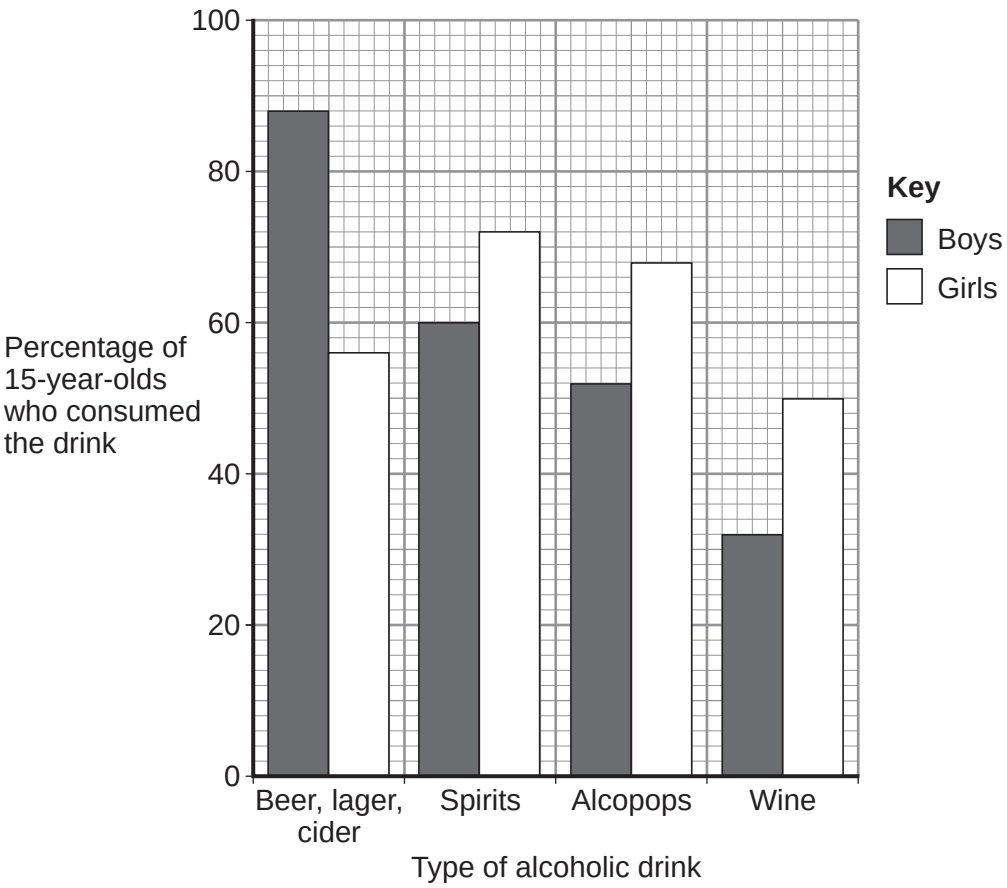
Question 7 continues on the next page

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 35 · continued

7 (c) **Figure 8** shows the results of a survey into the different types of alcoholic drinks consumed by one hundred 15-year-old boys and one hundred 15-year-old girls in the UK.

Figure 8



7 (c) (i) Describe the differences between the **types** of alcoholic drink consumed by boys and by girls.

Use **only** information from **Figure 8**.

[2 marks]

7 (c) (ii) A newspaper headline stated:

"All boys drink alcohol"

Use information from part **(c)** and **Figure 8** to give **one** reason why the newspaper headline may **not** be correct.

[1 mark]

9

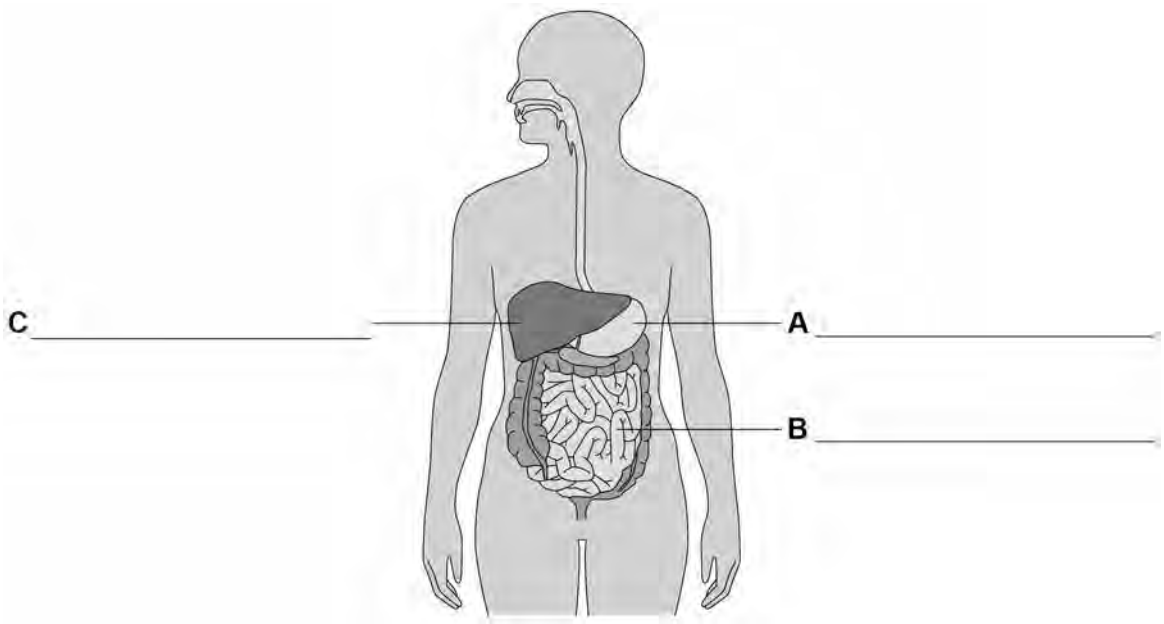
4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 36

June 2018 | 8461/1F | Original Q3

0 3 **Figure 5** shows the human digestive system.

Figure 5



0 3 . 1 Label organs **A**, **B** and **C**.

[3 marks]

0 3 . 2 Complete the sentences.

[3 marks]

Choose the answers from the box.

catalyse	**denatured**	**digest**	**energise**
excreted	**ingested**	**insoluble**	**soluble**

Digestion is the process of breaking down large food molecules into smaller molecules that are _____.

Enzymes help to break down food because they _____ chemical reactions.

If the temperature of an enzyme gets too high, the enzyme is _____.

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 36 · continued

0 3 . 3 Protease is an enzyme.

Protease breaks down protein.

What is protein broken down into?

[1 mark]

Tick **one** box.

- Amino acids ☐
- Fatty acids ☐
- Glucose ☐
- Glycerol ☐

0 3 . 4 Why is protein needed by the body?

[1 mark]

_____

_____

0 3 . 5 Which organ in the human digestive system produces protease?

[1 mark]

Tick **one** box.

- Gall bladder ☐
- Large intestine ☐
- Liver ☐
- Stomach ☐

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 36 · continued

0 3 . 6 Describe how you would test a sample of food to show it contains protein.

Give the reason for any safety precautions you would take.

[4 marks]

0 3 . 7 Complete the sentence.

[1 mark]

Choose the answer from the box.

fat	**fibre**	**minerals**	**vitamins**

Obesity can be caused by a diet high in _____.

0 3 . 8 Complete the sentence.

[1 mark]

Choose the answer from the box.

skin cancer	**type 1 diabetes**	**type 2 diabetes**

Obesity is a risk factor for _____.

15

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 37

June 2018 | 8461/2F | Original Q5

0 5 A person with Type 1 diabetes cannot make enough insulin.

0 5 . 1 Which organ makes insulin?

[1 mark]

Tick **one** box.

- Adrenal gland ☐
- Pancreas ☐
- Pituitary gland ☐
- Thyroid ☐

0 5 . 2 A person with Type 1 diabetes can control the concentration of glucose in the blood by injecting insulin.

Complete the sentences.

[2 marks]

Choose answers from the box.

DNA	**glycogen**	**kidney**
liver	**protein**	**skin**

Insulin acts on an organ called the _____.

This organ then takes in excess glucose from the blood and changes the glucose into _____.

0 5 . 3 Insulin cannot be taken as a tablet. This is because insulin is a type of protein.

What would happen to the insulin in the tablet if it reached the stomach?

[1 mark]

_____

_____

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 37 · continued

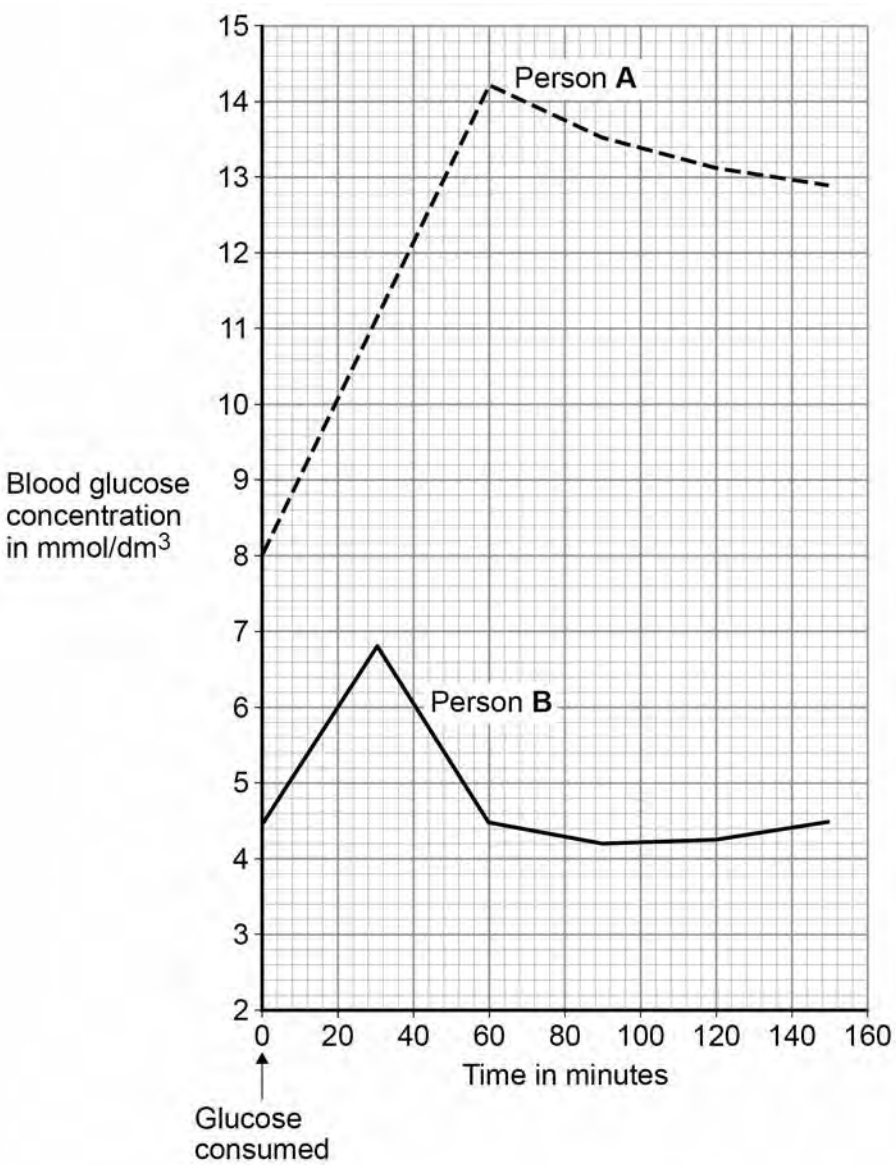
Two people each drank the same volume of a glucose drink.

Person **A** has Type 1 diabetes.

Person **B** does **not** have diabetes.

Figure 6 shows how the concentration of glucose in their blood changed.

Figure 6



4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 37 · continued

0 5 . 4 How much higher was the **highest** concentration of glucose in the blood of person **A** than the **highest** concentration in person **B**?

Use information from **Figure 6**.

[2 marks]

Answer = _____ mmol/dm^3

0 5 . 5 Describe **one** other way that the results for person **A** were different from the results for person **B**.

Use information from **Figure 6**.

[1 mark]

Question 5 continues on the next page

4.2.2.6 The effect of lifestyle on some non-communicable diseases

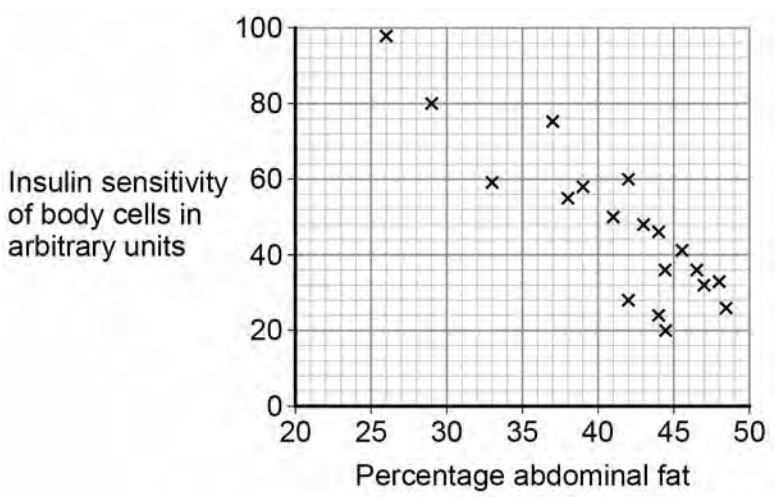
Question 37 · continued

Type 2 diabetes is another form of diabetes. Type 2 diabetes is common in obese people.

People with Type 2 diabetes make enough insulin, but still cannot control their blood glucose concentration. This is because the body cells are not sensitive to the insulin.

Figure 7 shows information about abdominal fat and insulin sensitivity in body cells.

Figure 7



0 5 . 6 What type of relationship is shown in **Figure 7**?

[1 mark]

Tick **one** box.

A negative correlation ☐

No correlation ☐

A positive correlation ☐

0 5 . 7 A person is at risk of developing Type 2 diabetes.

Suggest **two** ways the person could lower the chance of developing Type 2 diabetes.

[2 marks]

1 _____

_____

2 _____

_____

10

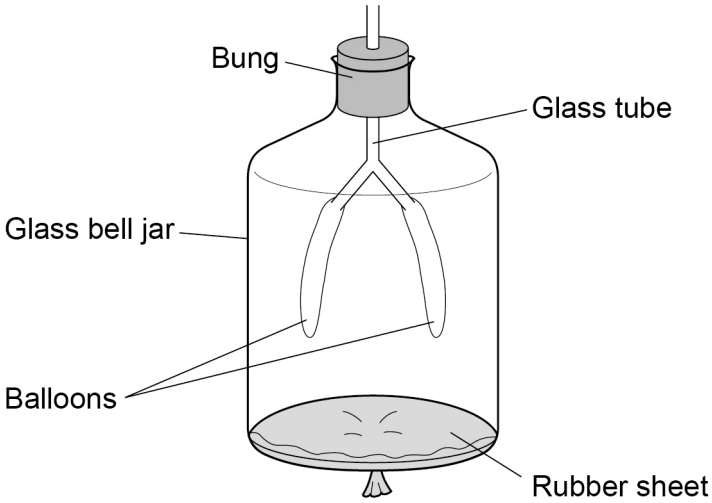
4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 38

November 2021 | 8461/1F | Original Q6

0 6 **Figure 12** shows a model used to demonstrate human breathing.

Figure 12



0 6 . 1 Which part of the breathing system is represented by the glass tube?

[1 mark]

Tick (✓) **one** box.

- Alveoli ☐
- Capillaries ☐
- Lung ☐
- Trachea ☐

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 38 · continued

The model in **Figure 12** represents the human breathing system.

A teacher said:

"The model does **not** represent the human breathing system very well."

0 6 . 2 Give **two** reasons why the teacher is correct.

[2 marks]

1 _____

_____

2 _____

_____

Question 6 continues on the next page

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 38 · continued November 2021 | 8461/1F | Original Q6

A scientist investigated the effect of exercise on breathing rate.

This is the method used.

1. Record the breathing rates of 10 male non-smokers at rest.
2. Tell each man to run on a treadmill at the same speed for 8 minutes.
3. Record the breathing rate of each man every 2 minutes.
4. Continue to record the breathing rate of each man for 4 minutes after he stops running.

0 6 . 3 Give **two** variables the scientist controlled in the investigation.

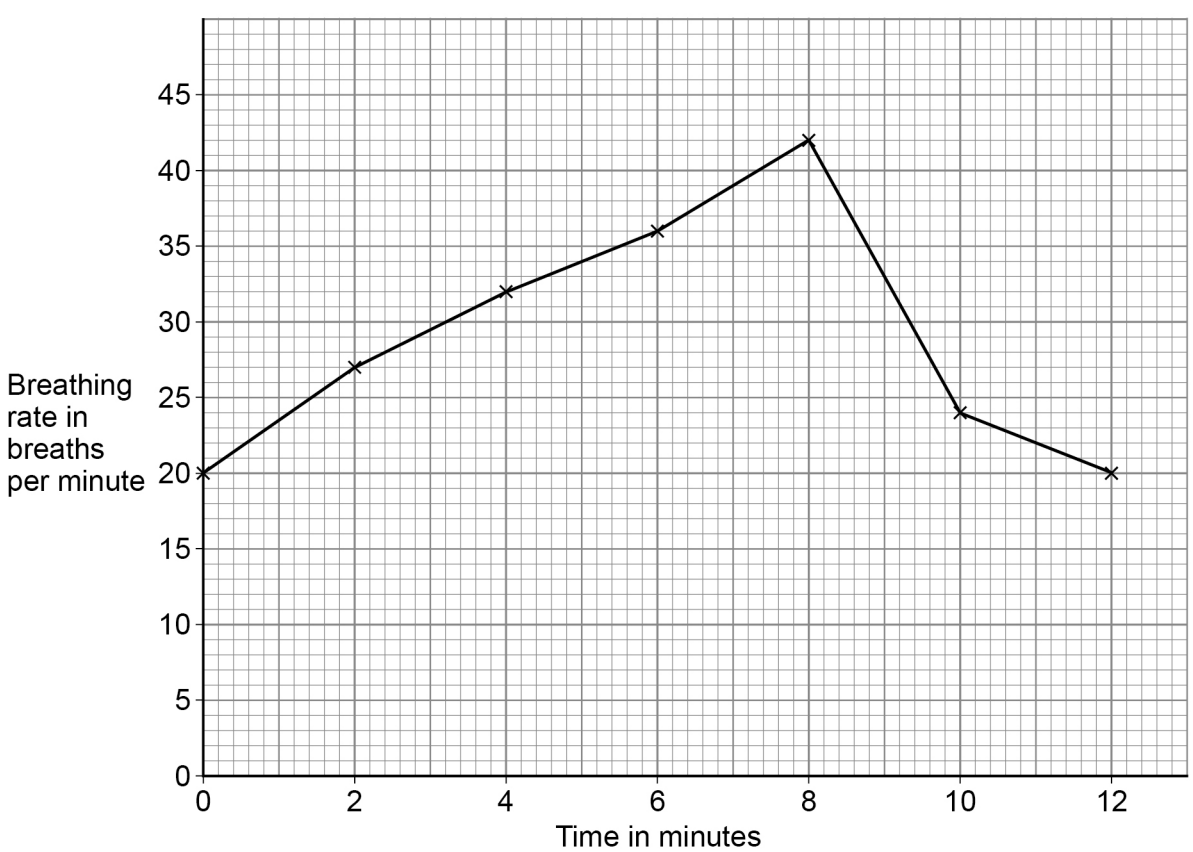
[2 marks]

1 _____

2 _____

Figure 13 shows the data collected from **one** of the men.

Figure 13



4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 38 · continued

0 6 . 4 Calculate the percentage increase in the man's breathing rate between 0 minutes and 8 minutes.

[3 marks]

Use the equation:

$$\text{percentage increase} = \frac{(\text{breathing rate at 8 minutes} - \text{breathing rate at 0 minutes})}{\text{breathing rate at 0 minutes}} \times 100$$

Percentage increase = _____ %

0 6 . 5 Explain why the man's breathing rate increased when he was running.

[2 marks]

Question 6 continues on the next page

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 38 · continued

0 6 . 6 Give **one** measurement that could be taken to show a different effect of exercise on the body.

Do **not** refer to breathing rate in your answer.

[1 mark]

0 6 . 7 The men in the investigation were all non-smokers.

Give **one** effect that smoking can have on the body.

[1 mark]

12

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 39

November 2021 | 8461/1F | Original Q9

0 9 Body Mass Index (BMI) is a way of finding out if a person's body mass falls within a healthy range for their height.

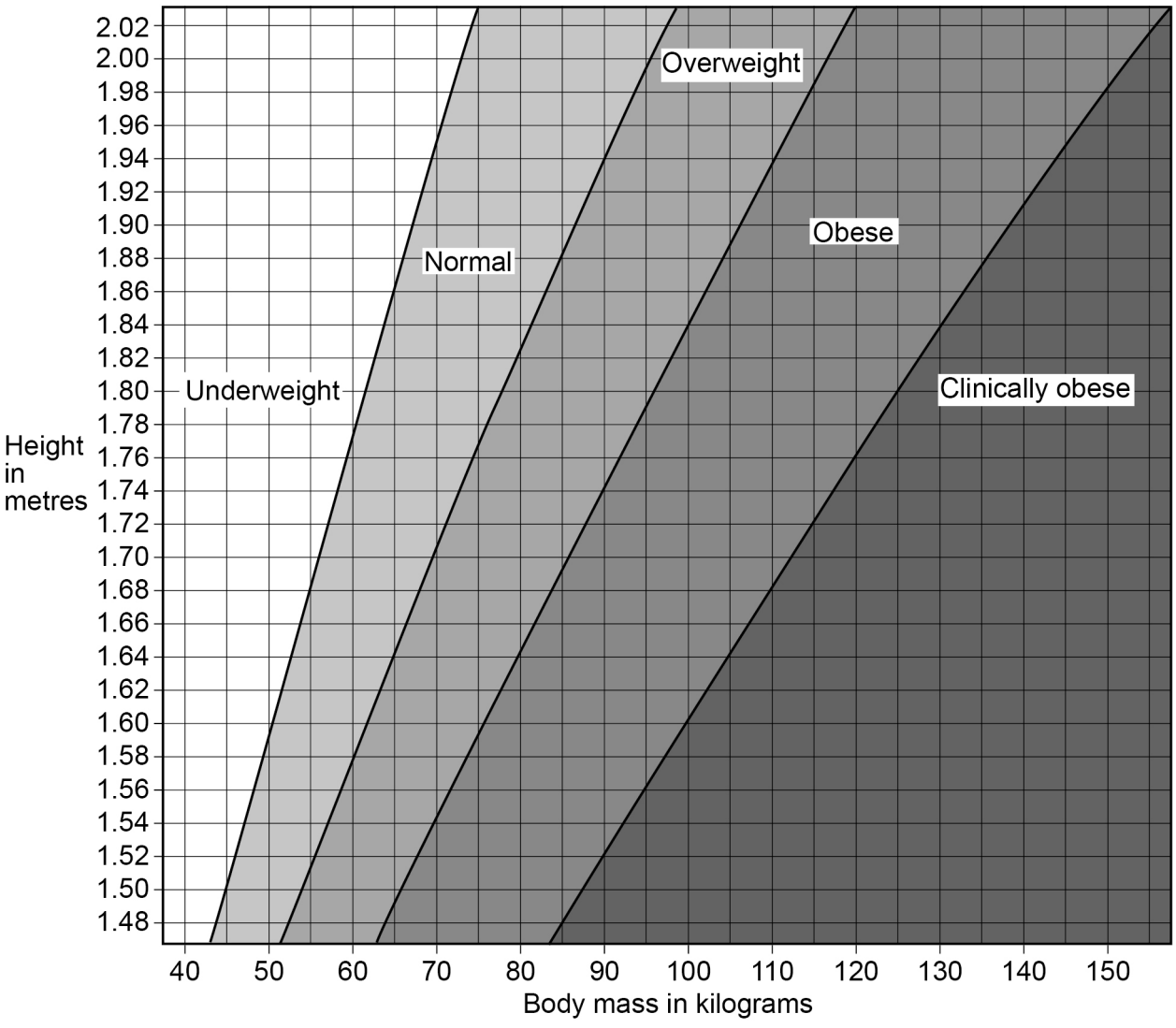
Table 4 shows information about two people.

Table 4

Person	Body mass in kg	Height in m	BMI in kg/m^2
A	63	1.65	23.1
B	92	1.71	**X**

Figure 18 shows five BMI categories for adults.

Figure 18



4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 39 · continued

0 9 . 1 Which is the BMI category of person **A** in **Table 4**?

[1 mark]

Tick (✓) **one** box.

- Clinically obese ☐
- Normal ☐
- Obese ☐
- Overweight ☐
- Underweight ☐

0 9 . 2 Calculate value **X** in **Table 4**.

Use the equation:

$$\text{BMI} = \frac{\text{body mass}}{\text{height}^2}$$

Give your answer to 3 significant figures.

[3 marks]

X = _____ kg/m^2

Question 9 continues on the next page

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 39 · continued

Scientists think there is a link between BMI and life expectancy.

Table 5 shows information about predicted life expectancy of men after the age of 50.

Table 5

BMI Category	Predicted number of years living in good health after the age of 50	Predicted number of years living in bad health after the age of 50
Normal	19.06	4.98
Overweight	18.68	5.32
Obese	16.37	7.08
Clinically obese	13.07	10.10

0 9 . 3 Describe **two** patterns shown in **Table 5** about the effects of BMI category.

[2 marks]

1 _____

_____

_____

2 _____

_____

_____

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 39 · continued

The number of people who are obese in the UK is increasing.

0 9 . 4 Explain the financial impact on the UK economy of an increasing number of people who are obese.

[2 marks]

0 9 . 5 A person who is obese is more at risk of arthritis.

Arthritis is a condition that damages joints.

Suggest how arthritis could affect a person's lifestyle.

[1 mark]

0 9 . 6 A person who eats a diet high in saturated fat might become obese.

Name **two** health conditions that might develop if a person eats a diet high in saturated fat.

Do **not** refer to arthritis in your answer.

[2 marks]

1

2

11

4.2.2.6 The effect of lifestyle on some non-communicable diseases

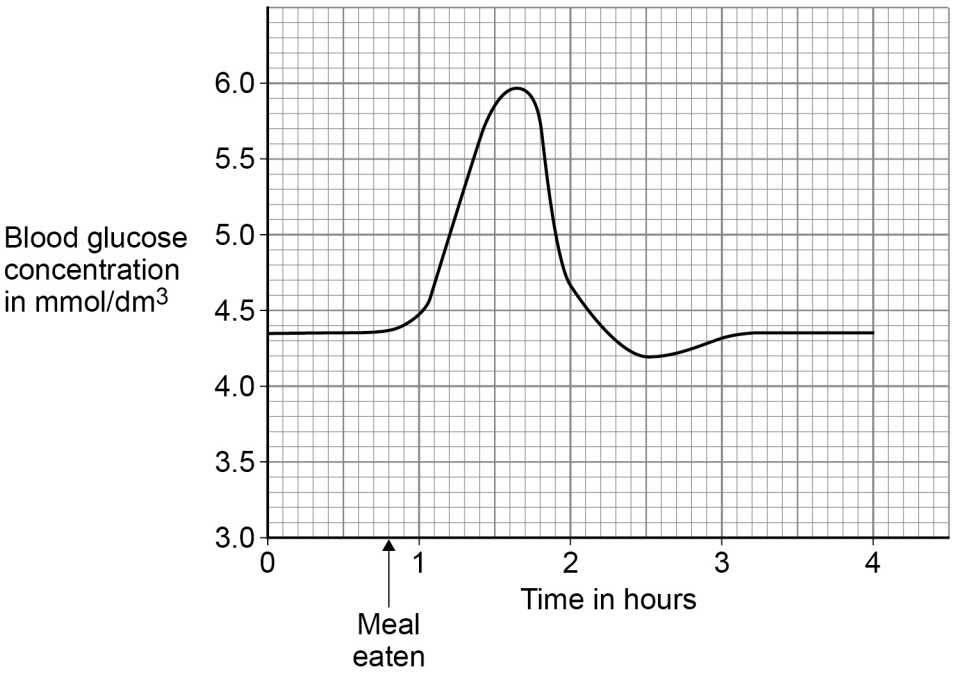
Question 40

June 2022 | 8461/2F | Original Q10

1 0 It is important to control the concentration of glucose in the blood.

Figure 13 shows how the concentration of glucose in the blood of a person changed over 4 hours.

Figure 13



1 0 . 1 Give **one** time when the concentration of **insulin** in the person's blood would be high.

Use **Figure 13**.

[1 mark]

Time = _____ hours

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 40 · continued

1 0 . 2 Explain the effect a high concentration of insulin has on blood glucose concentration.

[3 marks]

Effect _____

Explanation _____

_____

_____

_____

Question 10 continues on the next page

4.2.2.6 The effect of lifestyle on some non-communicable diseases

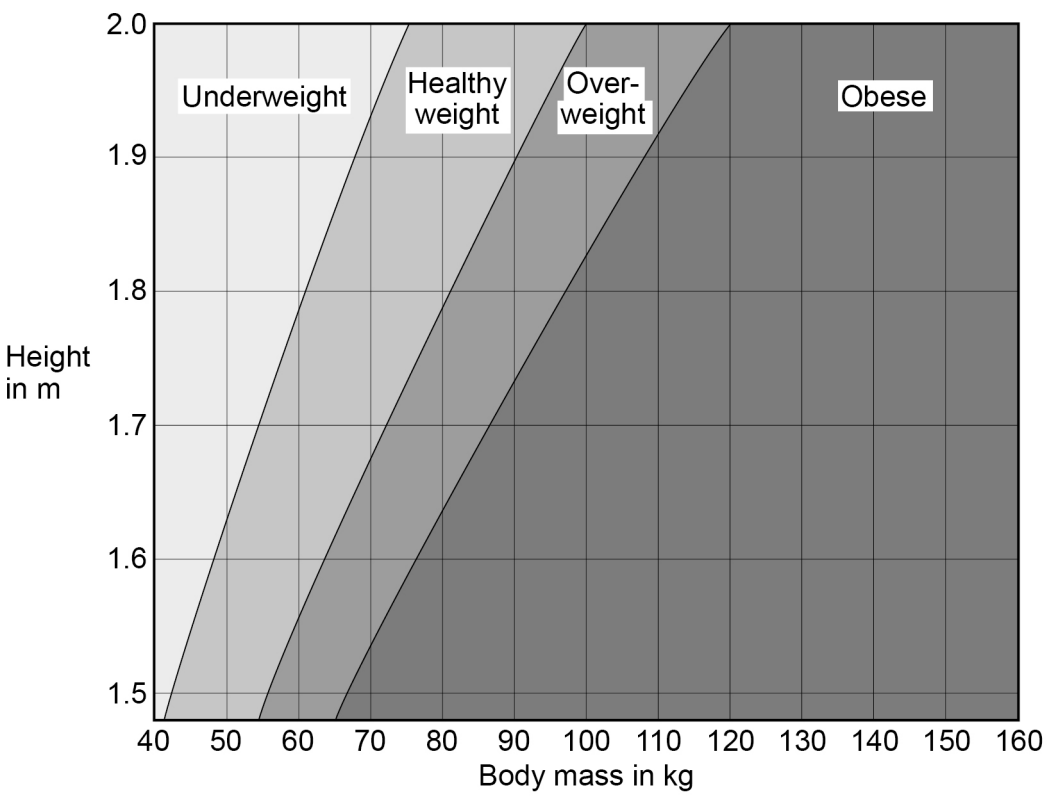
Question 40 · continued

People with diabetes have difficulty controlling the concentration of glucose in their blood.

Type 2 diabetes is linked to obesity.

Figure 14 shows how to find if an adult's body mass is healthy for their height.

Figure 14



4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 40 · continued

1 0 . 3 Person **A**:

- is 1.75 m in height
- has a body mass of 52 kg.

What is person **A**'s weight category?

[1 mark]

Tick (✓) **one** box.

Underweight	☐
Healthy weight	☐
Overweight	☐
Obese	☐

1 0 . 4 Person **B** is 1.9 m in height.

Give the range of body masses that would put person **B** in the healthy weight category.

[1 mark]

Range from _____ kg to _____ kg

Question 10 continues on the next page

1 0 . 5 Person **C** is obese.

A doctor thinks that person **C** has Type 2 diabetes.

The doctor tests a sample of blood from person **C**.

Table 5 shows:

- the results of the blood test
- the mean results for people who do **not** have diabetes.

Table 5

	Concentration in blood	
	Person C	**Mean for people who do not have diabetes**
Cholesterol in mmol/dm^3	6.21	5.20
Glucose in mmol/dm^3	9.56	4.51
Insulin in arbitrary units	24.32	14.83

Type 2 diabetes occurs when body cells have a reduced response to insulin.

Give **two** ways the results of the blood test show that person **C** might have Type 2 diabetes.

[2 marks]

1 _____

_____

2 _____

_____

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 40 · continued

June 2022 | 8461/2F | Original Q10

1 0 . 6 Give **two** ways that a person can reduce the chance of developing Type 2 diabetes.

[2 marks]

1 _____

_____

2 _____

_____

10

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 41

June 2024 | 8461/1F | Original Q7

0 7 A person has coronary heart disease.

0 7 . 1 Which blood vessels are affected by coronary heart disease?

[1 mark]

Tick (✓) **one** box.

Arteries ☐

Capillaries ☐

Veins ☐

A person's heart stops beating.

The person stops breathing.

A first-aider pushes down on the person's chest.

Pushing down on the person's chest puts pressure on the heart.

0 7 . 2 Explain why putting pressure on the heart helps the person.

[2 marks]

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 41 · continued

0 7 . 3 The first-aider also forces air into the person's lungs by blowing into their mouth.

Describe how forcing air into the person's lungs helps the person.

[1 mark]

0 7 . 4 The person's heart starts to beat again and the person starts breathing.

The person has a high level of cholesterol in their blood.

Name **one** type of drug that would decrease the level of cholesterol in the person's blood.

[1 mark]

0 7 . 5 A doctor decides that the person needs to have a stent fitted.

Explain how a stent works to treat coronary heart disease.

[2 marks]

Question 7 continues on the next page

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 41 · continued

Table 5 shows the effect of smoking on the risk of developing different cardiovascular diseases.

Table 5

Cardiovascular disease	Percentage (%) increase in risk compared to people who have never smoked
E	14
F	20
G	29
H	70

0 7 . 6 Give **two** conclusions that can be made from the data in **Table 5**.

[2 marks]

1 _____

_____

2 _____

_____

0 7 . 7 Complete **Figure 6**.

You should:

- label the y-axis
- add the correct scale to the y-axis
- plot the data from **Table 5**
- label each bar.

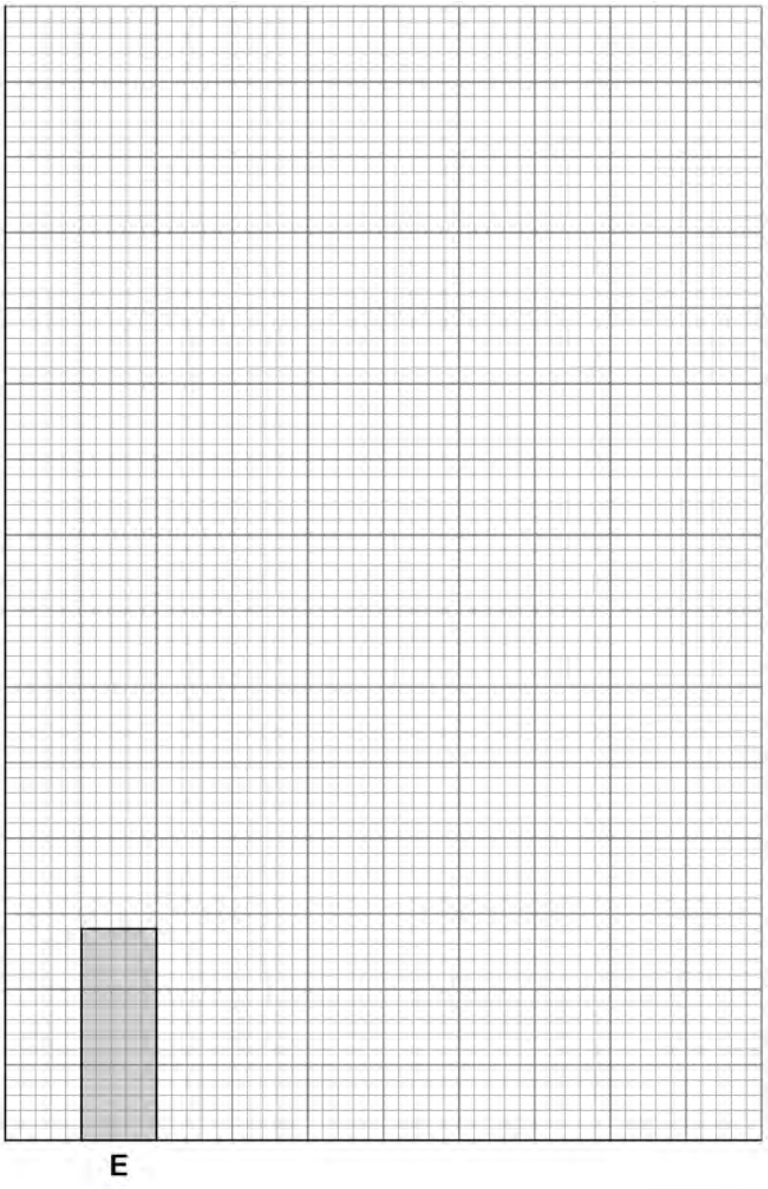
The bar for cardiovascular disease **E** has been plotted for you.

[4 marks]

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 41 · continued

Figure 6



0 7 . 8 Describe **one** lifestyle factor that can increase the risk of cardiovascular disease.

Do **not** refer to smoking in your answer.

[1 mark]

14

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 42

June 2025 | 8461/1F | Original Q7

0 7 Eating too much carbohydrate can cause obesity.

0 7 . 1 Name **one** disease that obesity is a risk factor for.

[1 mark]

Table 5 shows information about sugar intake and obesity in different countries.

Table 5

Country	Mean sugar intake per person per day in grams	Mean obesity rate in arbitrary units
A	122	18
B	80	9
C	172	25
D	150	23
E	110	15
F	144	19
G	192	32

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 42 · continued

0 7 . 2 Complete **Figure 10**.

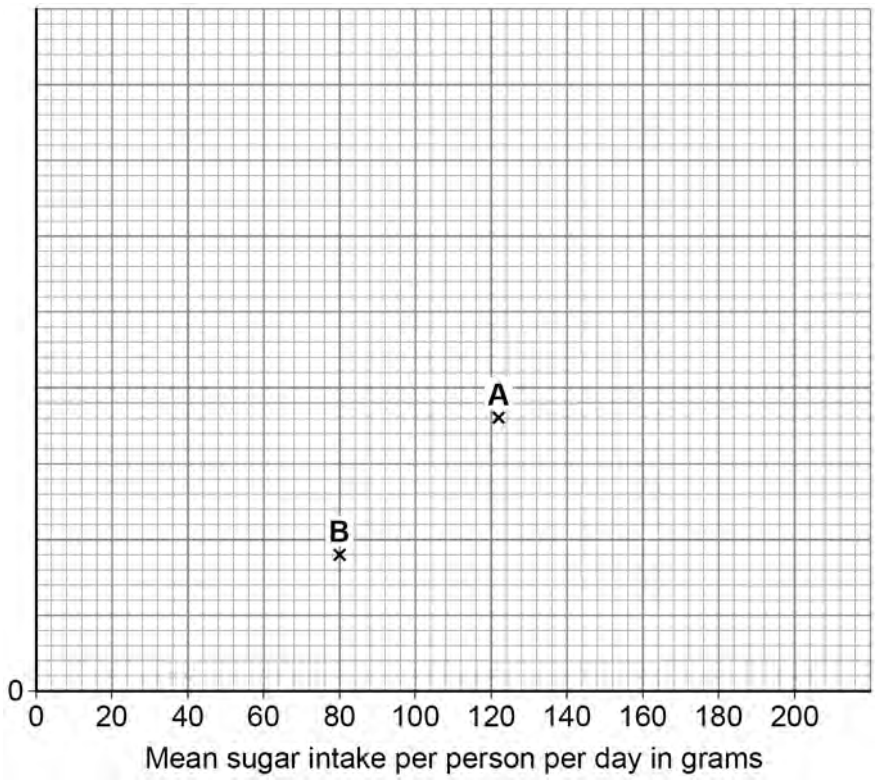
You should:

- label the *y*-axis
- add the scale for the *y*-axis
- plot the data for countries **C**, **D**, **E**, **F** and **G** from **Table 5**
- draw a line of best fit.

Countries **A** and **B** have been completed for you.

[4 marks]

Figure 10



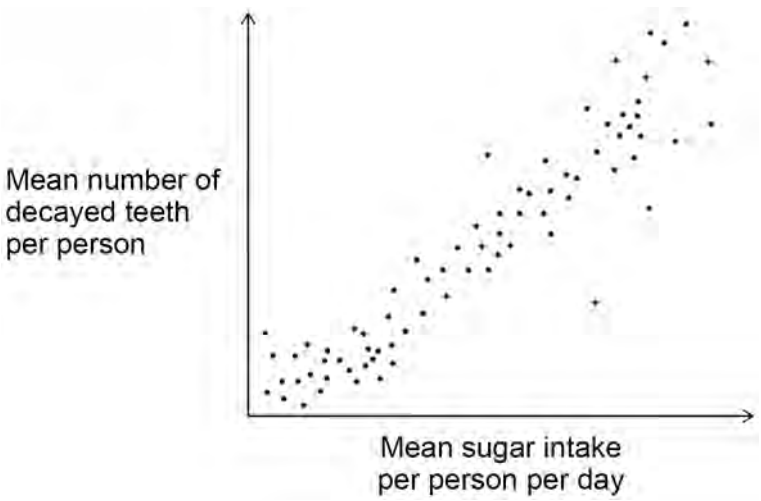
Question 7 continues on the next page

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 42 · continued

Figure 11 shows information about the relationship between sugar intake and tooth decay.

Figure 11



0 7 . 3 Name the type of graph shown in **Figure 11**.

[1 mark]

0 7 . 4 What relationship is shown between the two variables in **Figure 11**?

[1 mark]

Tick (✓) **one** box.

Inversely proportional ☐

No correlation ☐

Positive correlation ☐

Question 42 · continued

Sugars and starch are carbohydrates.

A student investigated the effect of temperature on the activity of amylase.

For each temperature, the student:

- mixed starch and amylase together
- added iodine solution after 5 minutes.

The iodine solution was yellow-brown before it was added to the mixture.

Table 6 shows the results.

Table 6

Temperature in °C	Colour of iodine solution
10	blue-black
30	yellow-brown
60	blue-black
90	blue-black

0 7 . 5 Explain the results at 30 °C and at 90 °C.

[4 marks]

30 °C _____

_____

_____

_____

90 °C _____

_____

_____

_____

4.2.2.6 The effect of lifestyle on some non-communicable diseases

Question 42 · continued

0 7 . 6 How could the student change the investigation to find a more precise temperature that amylase works best at?

[1 mark]

Tick (✓) **one** box.

Test more temperatures between 10 °C and 30 °C. ☐

Test more temperatures between 10 °C and 60 °C. ☐

Test more temperatures between 30 °C and 60 °C. ☐

Test more temperatures between 30 °C and 90 °C. ☐

0 7 . 7 Protease enzymes are involved in protein digestion.

Different types of protease enzyme are active in different organs of the digestive system.

Complete **Table 7** to identify the organ where each protease enzyme is active.

[2 marks]

Table 7

Protease enzyme	Optimum pH	Organ where enzyme is active
Pepsin	2	
Trypsin	8	

14