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|---------------------|--|------------------|--|
| Surname | | Other Names | |
| Centre Number | | Candidate Number | |
| Candidate signature | | | |

General Certificate of Secondary Education
Specimen Paper



SCIENCE A
Unit 1a Biology (Human Biology)

BLY1A

BIOLOGY
Unit 1a Biology (Human Biology)

Date and Time

For this paper you must have:

- a black ball-point pen
- an objective test answer sheet.

You may use a calculator.

Time allowed: 30 minutes

Instructions

- Fill in the boxes at the top of this page.
- Check that your name, candidate number and centre number are printed on the separate answer sheet.
- Check that the separate answer sheet has the title 'Human Biology' printed on it.
- Attempt **one Tier only**, **either** the Foundation Tier **or** the Higher Tier.
- Make sure that you use the correct side of the separate answer sheet; the Foundation Tier is printed on one side and the Higher Tier on the other.
- Answer **all** the questions for the Tier you are attempting.
- Record your answers on the separate answer sheet only.
- Do all rough work in this book, **not** on your answer sheet.

Instructions for recording answers

- Use a **black ball-point pen**.
- For each answer **completely fill in the circle** as shown:

| | | | |
|-----------------------|----------------------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 |
| <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |
- Do **not** extend beyond the circles.
- If you want to change your answer, **you must** cross out your original answer, as shown:

| | | | |
|-----------------------|----------------------------------|-----------------------|----------------------------------|
| 1 | 2 | 3 | 4 |
| <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
- If you change your mind about an answer you have crossed out and now want to choose it, draw a ring around the cross as shown:

| | | | |
|-----------------------|----------------------------------|-----------------------|----------------------------------|
| 1 | 2 | 3 | 4 |
| <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |

Information

- The maximum mark for this paper is 36.

Advice

- Do **not** choose more responses than you are asked to. You will lose marks if you do.
- Make sure that you hand in both your answer sheet and this question paper at the end of the test.
- If you start to answer on the wrong side of the answer sheet by mistake, make sure that you cross out **completely** the work that is not to be marked.

You must do **one Tier** only, **either** the Foundation tier **or** the Higher Tier.
The Higher Tier starts on page 16 of this booklet.

FOUNDATION TIER

SECTION ONE

Questions **ONE** to **SIX**.

In these questions, match the letters, **A**, **B**, **C** and **D**, with the numbers **1 – 4**.

Use **each** answer only **once**.

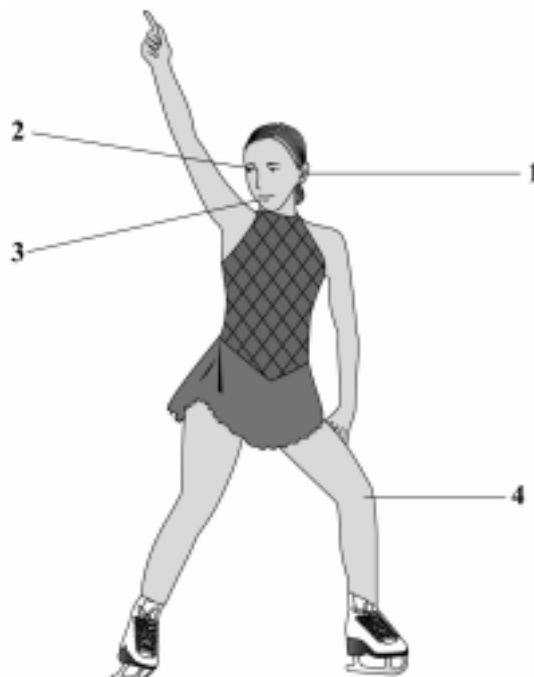
Mark your choices on the answer sheet.

QUESTION ONE

The drawing shows a skater.
The skater has organs which contain different receptors.

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

- A** contains light receptors
- B** contains receptors sensitive to chemicals
- C** contains sound receptors
- D** contains temperature receptors



QUESTION TWO

The table is about the effects of some substances on the body.

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

A alcohol

B carbon monoxide

C cannabis

D nicotine

| Substance | Effect on body |
|------------------|---|
| 1 | is the addictive substance in cigarettes |
| 2 | is thought to cause psychological problems in many people |
| 3 | reduces the amount of oxygen which the blood carries |
| 4 | slows down reaction time |

Turn over for the next question

QUESTION THREE

The table is about substances which are effective against microorganisms.

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

- A** antibody
- B** antitoxin
- C** blood clot
- D** penicillin

| Substance | Feature |
|------------------|--|
| 1 | kills bacteria but not viruses |
| 2 | kills both bacteria and viruses |
| 3 | neutralises poisons produced by microorganisms |
| 4 | seals cuts to prevent entry of microorganisms |

QUESTION FOUR

Many people are obese.

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

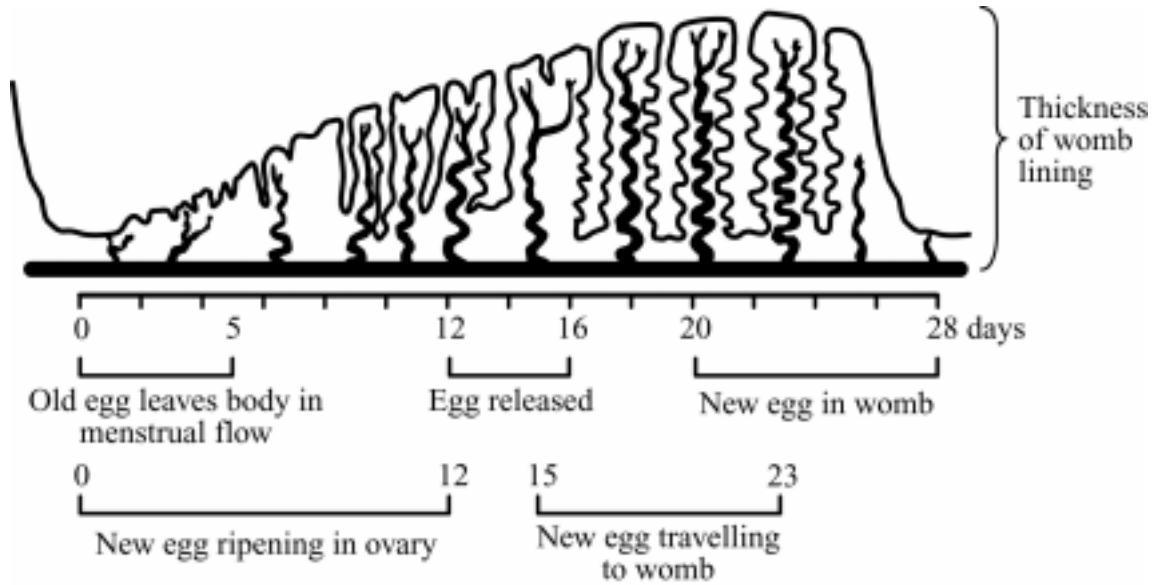
- A** arthritis
- B** exercise
- C** food
- D** mass

Obesity is caused by doing less . . . **1** . . . and taking in more . . . **2**

This causes an increase in body . . . **3** . . . which can lead to . . . **4**

QUESTION FIVE

The diagram shows some of the events in a woman's monthly cycle.



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

- A** 4
- B** 14
- C** 21
- D** 26

| | |
|----------|---|
| 1 | a day when an egg could be released |
| 2 | a day when an old egg is leaving the body |
| 3 | a day when the womb lining is breaking down |
| 4 | the day when the womb lining is thickest |

QUESTION SIX

The parts of blood help to keep us healthy in different ways.

Table 1 shows the number of these parts in a healthy person.

Table 1

| Part of blood | Number per mm ³ in healthy person |
|-------------------|--|
| White blood cells | 4000 to 11 000 |
| Red blood cells | 4.5 to 6.5 million |
| Platelets | 150 000 to 350 000 |

Table 2 shows the blood test results for four people.

Table 2

| Test | James | John | Michael | Paul |
|-------------------|-------------|-------------|-------------|-------------|
| White blood cells | 6500 | 1000 | 4100 | 30 000 |
| Red blood cells | 5.3 million | 5.2 million | 3.0 million | 5.5 million |
| Platelets | 70 000 | 210 000 | 200 000 | 180 000 |

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

A James

B John

C Michael

D Paul

The person with the least red blood cells is ... **1**

The person whose blood would clot most slowly is ... **2**

The person who would be most likely to catch an infection is ... **3**

One of the symptoms of leukaemia is a large increase in the number of white blood cells.

The person most likely to be suffering from leukaemia is ... **4**

Turn over for the next question

SECTION TWOQuestions **SEVEN** to **NINE**.

Each of these questions has four parts.

In each part choose only **one** answer.

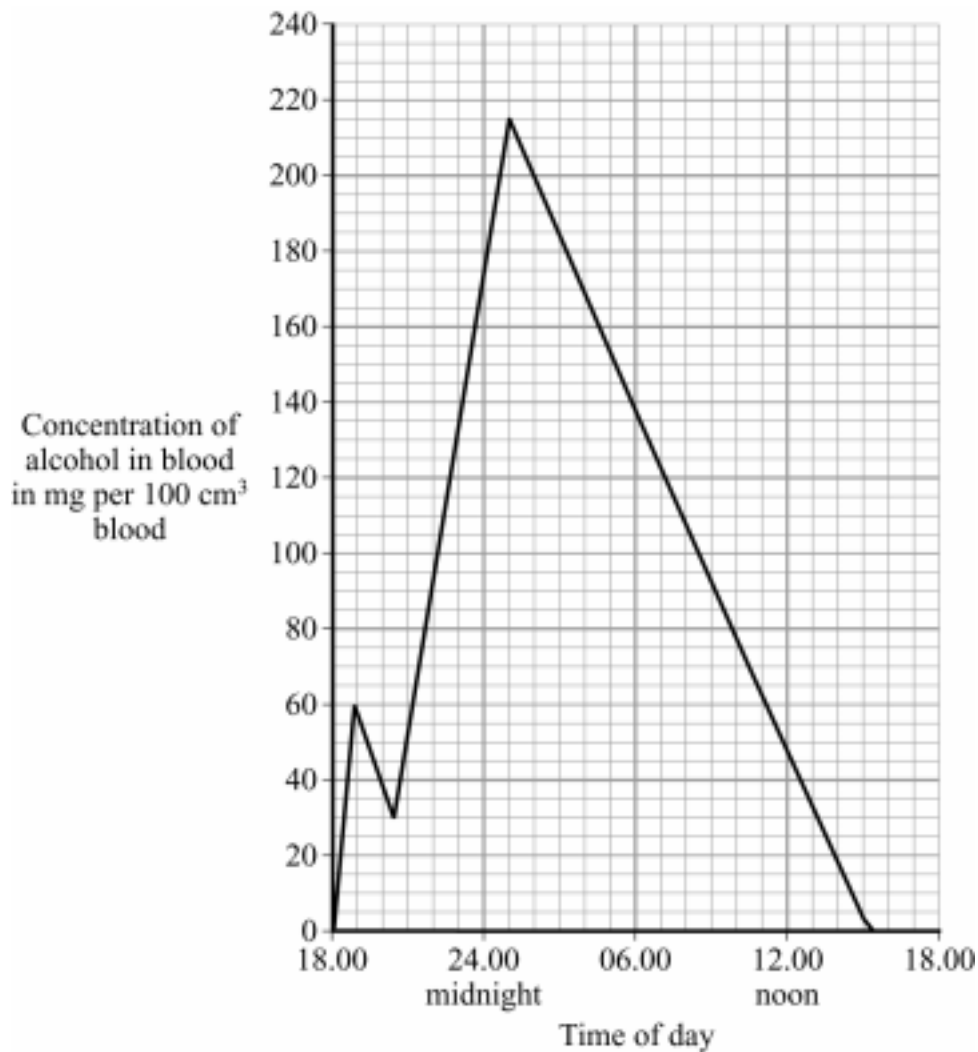
Mark your choices on the answer sheet.

QUESTION SEVEN

A man had some alcoholic drink at home.

Later he went out and had some more alcoholic drink.

The graph shows the concentration of alcohol in the man's blood over this period and the following few hours.



7A What was the highest concentration of alcohol in the man's blood?

- 1 205 mg per 100 cm³
- 2 208 mg per 100 cm³
- 3 215 mg per 100 cm³
- 4 218 mg per 100 cm³

7B The legal limit for driving in Britain is 80 mg alcohol per 100 cm³ of blood.

During which of the following complete periods would it be illegal for the man to drive?

- 1 18.30 to 14.45
- 2 19.00 to 01.00
- 3 21.00 to 01.00
- 4 22.15 to 09.15

7C It is dangerous to drive a car after drinking alcohol because . . .

- 1 alcohol causes psychological problems.
- 2 alcohol is a drug.
- 3 alcohol is addictive.
- 4 alcohol slows reactions.

7D Which one of the following is most likely to be caused by drinking too much alcohol?

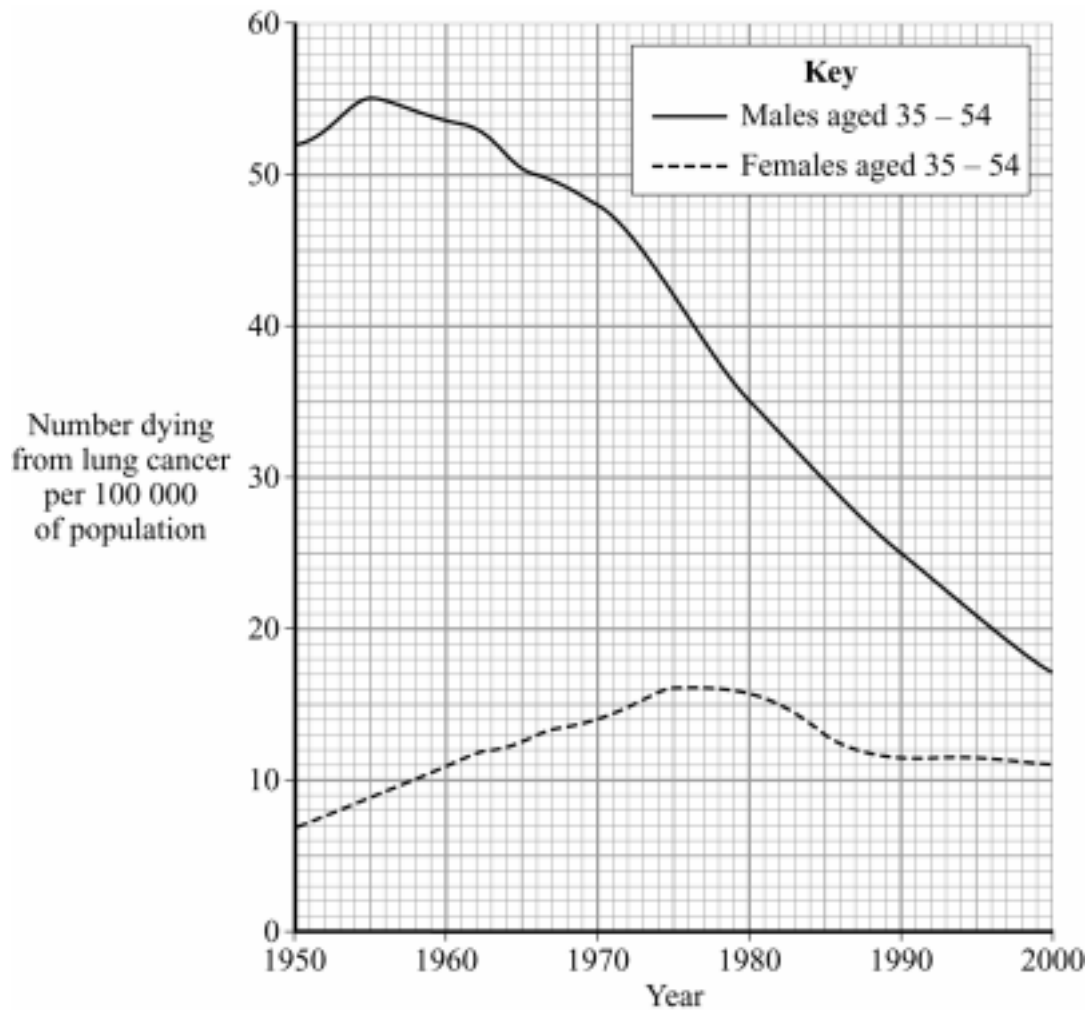
- 1 babies with low birth mass
- 2 heart disease
- 3 liver disease
- 4 obesity

QUESTION EIGHT

Scientists study the effect of smoking on the number of people dying from lung cancer.

Graph 1 shows the number of people aged 35–54 who died from lung cancer in this country between 1950 and 2000.

Graph 1



8A How did the number of men, aged 35 – 54 who died from lung cancer, change between 1960 and 2000?

- 1 It rose then fell.
- 2 It rose to 11 per 100 000.
- 3 It fell to 17.
- 4 It fell by 37 per 100 000.

8B A town in this country had 500 000 inhabitants in 1955.

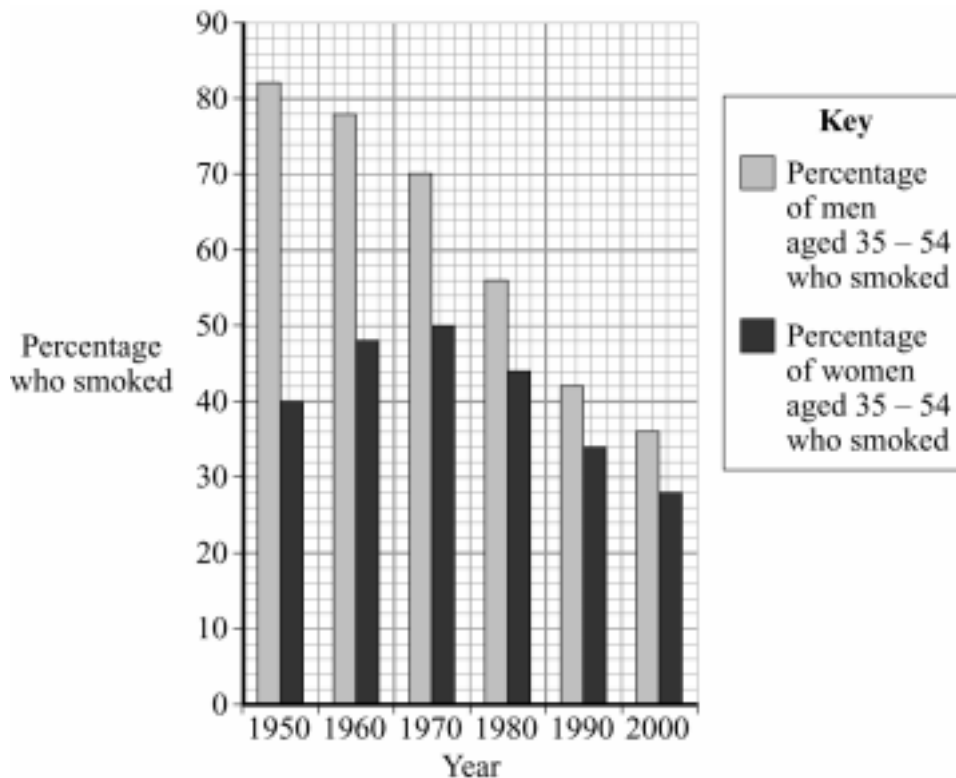
How many men aged 35–54 from that town are likely to have died from lung cancer in 1955?

- 1 45
- 2 55
- 3 275
- 4 550

Question 8 continues on the next page

Graph 2 shows the percentage of the population who smoked between 1950 and 2000.

Graph 2



8C What conclusion can be drawn from the data in **Graphs 1** and **2**?

- 1 Smoking causes lung cancer.
- 2 The more cigarettes you smoke, the more likely you are to get lung cancer.
- 3 The younger you start smoking, the more likely you are to get lung cancer.
- 4 There is a correlation between the percentage of people who smoke and the number of deaths from lung cancer.

8D How was the data in **Graphs 1** and **2** most likely to have been collected?

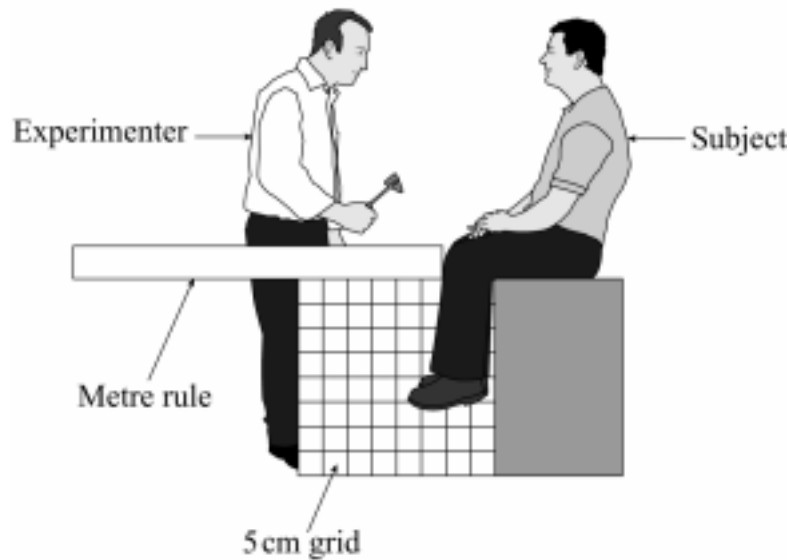
- 1 Scientists carried out telephone surveys.
- 2 Scientists collated information from medical databases.
- 3 Scientists did experiments.
- 4 Scientists did internet searches.

Turn over for the next question

QUESTION NINE

When the tendon below the knee is tapped with a hammer, the lower leg jerks upwards in a reflex action. A group of students wanted to find out how the speed of the hammer affected the distance the lower leg moved.

The diagram shows how the experiment was set up.



Each trial was recorded on a video. A frame was taken every 33 milliseconds. The video was then played using single-frame advance. The number of frames for the hammer to move to the knee was found. The faster the speed, the smaller was the number of frames. The video was also used to find the distance moved by the toe.

In each trial, the experimenter held the hammer 20 cm from the subject's knee then hit the subject's tendon. For each trial the experimenter used the hammer at a different speed.

The table shows some of the results.

| Trial number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|----|----|----|----|----|----|----|----|----|----|
| Distance hammer moved to knee (in cm) | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Number of frames it took the hammer to move to the knee | 15 | 16 | 12 | 10 | 9 | 8 | 7 | 6 | 2 | 2 |
| Distance moved by toe (in cm) | 0 | 0 | 5 | 5 | 10 | 10 | 10 | 10 | 15 | 15 |

9A What was the control variable in this experiment?

- 1 the distance moved by the hammer
- 2 the distance moved by the toe
- 3 the number of frames
- 4 the speed of the hammer

9B One advantage of using the video to record the results was that . . .

- 1 it took less time to record the results.
- 2 it was easier to work out an average.
- 3 the distance moved by the hammer could be measured more accurately.
- 4 the speed of the hammer could be measured more accurately.

9C Which is the best conclusion that can be drawn from the results?

- 1 The faster the hammer moves, the further the foot moves.
- 2 The distance the foot moves is related to the speed of the hammer.
- 3 The speed at which the foot moves is directly proportional to the speed of the hammer.
- 4 The slower the hammer moves, the further the foot moves.

9D The precision of the experiment could be improved by . . .

- 1 using a 1 cm grid rather than a 5 cm grid.
- 2 using a greater range of hammer speeds.
- 3 using a stopwatch instead of a video.
- 4 using a tape measure rather than a metre rule.

END OF TEST

You must do **one Tier** only, **either** the Foundation tier **or** the Higher Tier.
The Foundation Tier is earlier in this booklet.

HIGHER TIER**SECTION ONE**Questions **ONE** and **TWO**In these questions, match the letters, **A**, **B**, **C** and **D**, with the numbers **1 – 4**.Use **each** answer only **once**.

Mark your choices on the answer sheet.

QUESTION ONE

The parts of blood help to keep us healthy in different ways.

Table 1 shows the number of these parts in a healthy person.**Table 1**

| Part of blood | Number per mm³ in healthy person |
|----------------------|--|
| White blood cells | 4000 to 11 000 |
| Red blood cells | 4.5 to 6.5 million |
| Platelets | 150 000 to 350 000 |

Table 2 shows the blood test results for four people.**Table 2**

| Test | James | John | Michael | Paul |
|-------------------|--------------|-------------|----------------|-------------|
| White blood cells | 6500 | 1000 | 4100 | 30 000 |
| Red blood cells | 5.3 million | 5.2 million | 3.0 million | 5.5 million |
| Platelets | 70 000 | 210 000 | 200 000 | 180 000 |

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

- A** James
- B** John
- C** Michael
- D** Paul

The person with the least red blood cells is . . . **1**

The person whose blood would clot most slowly is . . . **2**

The person who would be most likely to catch an infection is . . . **3**

One of the symptoms of leukaemia is a large increase in the number of white blood cells.

The person most likely to be suffering from leukaemia is . . . **4**

QUESTION TWO

The table is about the effects of some conditions on the body.

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

- A** being overweight
- B** high blood cholesterol
- C** high level of salt in the diet
- D** lack of food

| Substance | Effect on body |
|-----------|------------------------------|
| 1 | arthritis |
| 2 | disease of the blood vessels |
| 3 | high blood pressure |
| 4 | irregular periods |

SECTION TWOQuestions **THREE** to **NINE**.

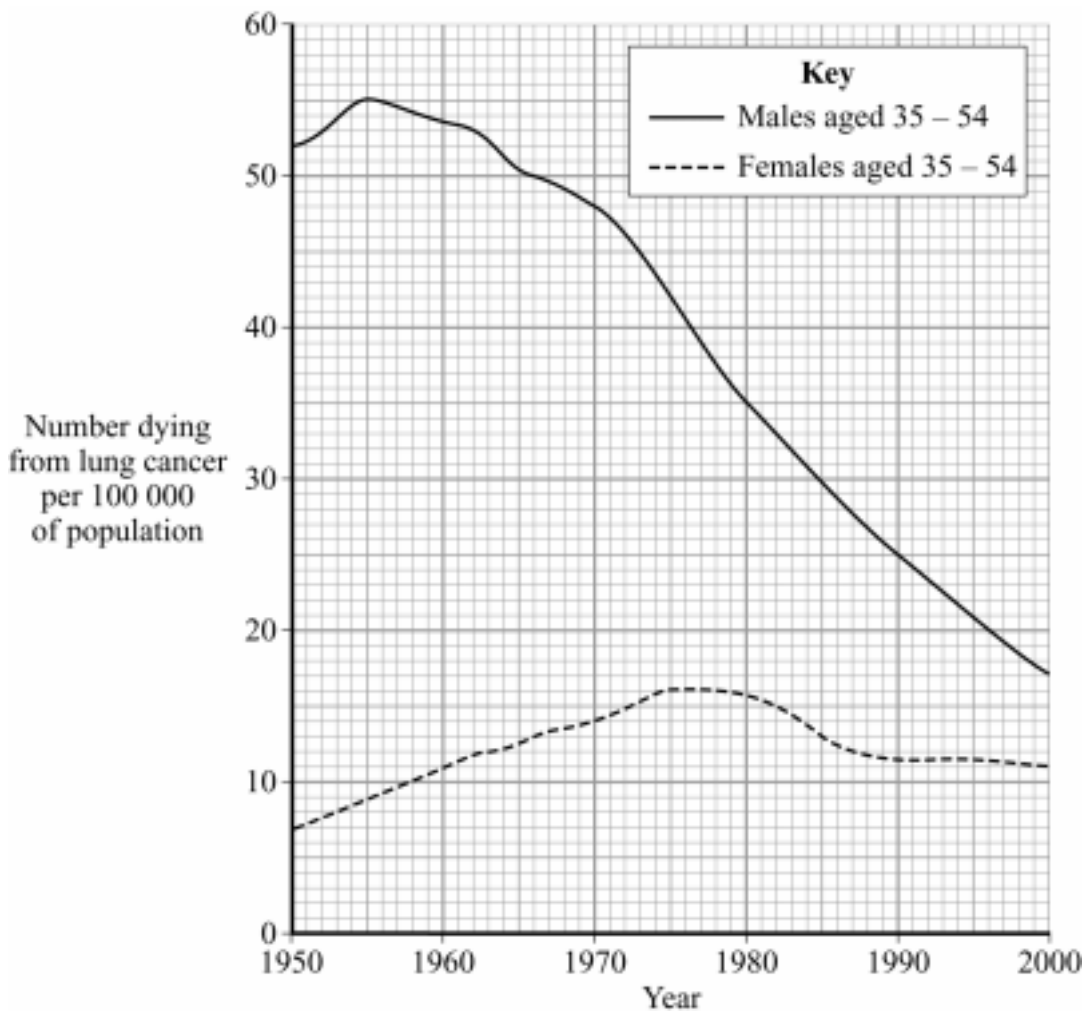
Each of these questions has four parts.

In each part choose only **one** answer.

Mark your choices on the answer sheet.

QUESTION THREE

Scientists study the effect of smoking on the number of people dying from lung cancer.

Graph 1 shows the number of people aged 35–54 who died from lung cancer in this country between 1950 and 2000.**Graph 1**

3A How did the number of men, aged 35–54 who died from lung cancer, change between 1960 and 2000?

- 1 It rose then fell.
- 2 It rose to 11 per 100 000.
- 3 It fell to 17.
- 4 It fell by 37 per 100 000.

3B A town in this country had 500 000 inhabitants in 1955.

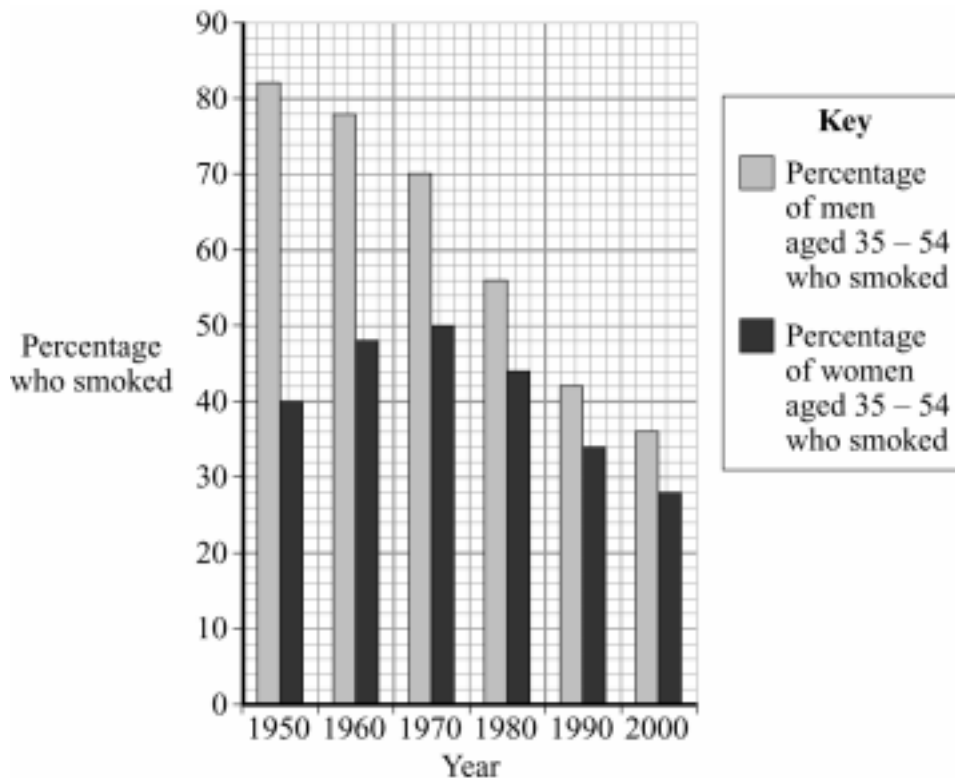
How many men aged 35–54 from that town are likely to have died from lung cancer in 1955?

- 1 45
- 2 55
- 3 275
- 4 550

Question 3 continues on the next page

Graph 2 shows the percentage of the population who smoked between 1950 and 2000.

Graph 2



3C What conclusion can be drawn from the data in **Graphs 1** and **2**?

- 1 Smoking causes lung cancer.
- 2 The more cigarettes you smoke, the more likely you are to get lung cancer.
- 3 The younger you start smoking, the more likely you are to get lung cancer.
- 4 There is a correlation between the percentage of people who smoke and the number of deaths from lung cancer.

3D How was the data in **Graphs 1** and **2** collected?

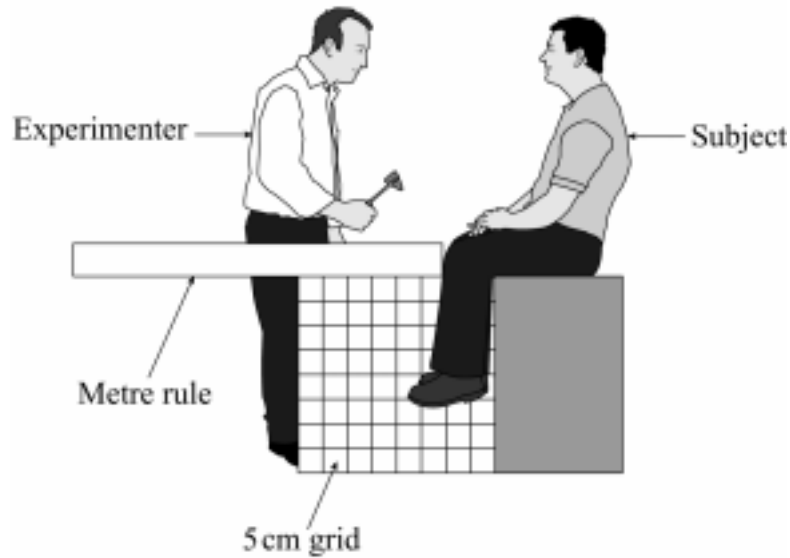
- 1 Scientists carried out telephone surveys.
- 2 Scientists collated information from medical databases.
- 3 Scientists did experiments.
- 4 Scientists did internet searches.

Turn over for the next question

QUESTION FOUR

When the tendon below the knee is tapped with a hammer, the lower leg jerks upwards in a reflex action. A group of students wanted to find out how the speed of the hammer affected the distance the lower leg moved.

The diagram shows how the experiment was set up.



Each trial was recorded on a video. A frame was taken every 33 milliseconds. The video was then played using single-frame advance. The number of frames for the hammer to move to the knee was found. The faster the speed, the smaller was the number of frames. The video was also used to find the distance moved by the toe.

In each trial, the experimenter held the hammer 20 cm from the subject's knee then hit the subject's tendon. For each trial the experimenter used the hammer at a different speed.

The table shows some of the results.

| | | | | | | | | | | |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| Trial number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Distance hammer moved to knee (in cm) | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Number of frames it took the hammer to move to the knee | 15 | 16 | 12 | 10 | 9 | 8 | 7 | 6 | 2 | 2 |
| Distance moved by toe (in cm) | 0 | 0 | 5 | 5 | 10 | 10 | 10 | 10 | 15 | 15 |

4A What was the control variable in this experiment?

- 1 the distance moved by the hammer
- 2 the distance moved by the toe
- 3 the number of frames
- 4 the speed of the hammer

4B One advantage of using the video to record the results was that . . .

- 1 it took less time to record the results.
- 2 it was easier to work out an average.
- 3 the distance moved by the hammer could be measured more accurately.
- 4 the speed of the hammer could be measured more accurately.

4C Which is the best conclusion that can be drawn from the results?

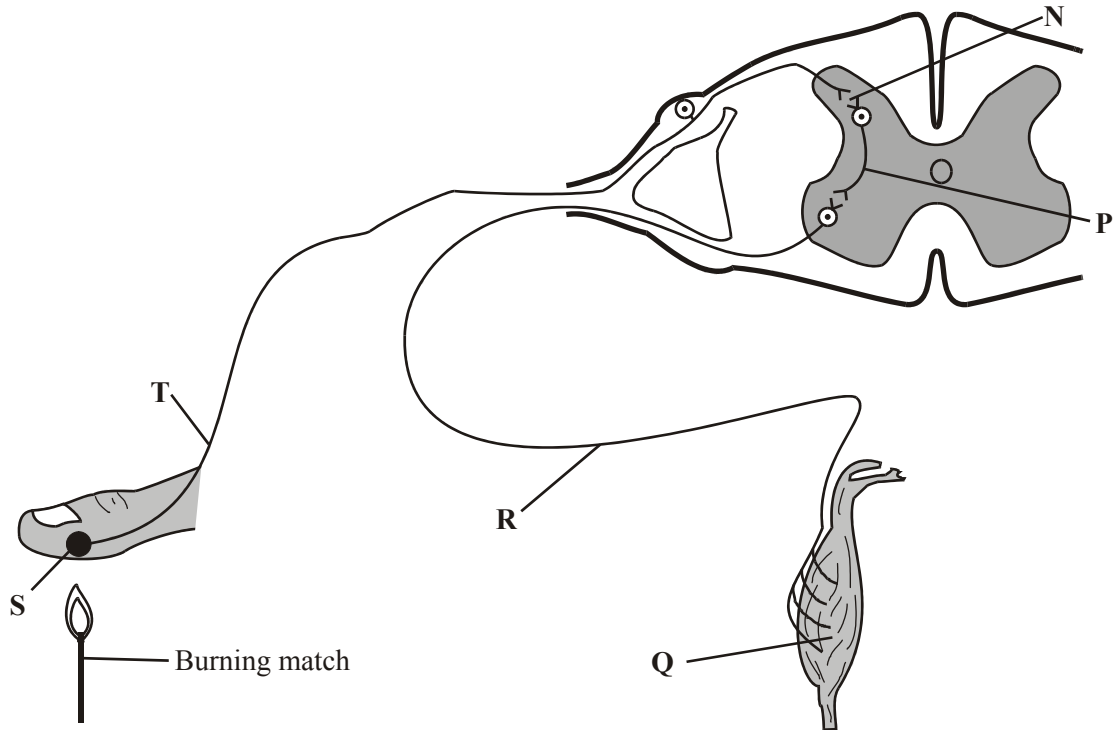
- 1 The faster the hammer moves, the further the foot moves.
- 2 The distance the foot moves is related to the speed of the hammer.
- 3 The speed at which the foot moves is directly proportional to the speed of the hammer.
- 4 The slower the hammer moves, the further the foot moves.

4D The precision of the experiment could be improved by . . .

- 1 using a 1 cm grid rather than a 5 cm grid.
- 2 using a greater range of hammer speeds.
- 3 using a stopwatch instead of a video.
- 4 using a tape measure rather than a metre rule.

QUESTION FIVE

A person accidentally puts their hand close to a burning match. Their hand automatically moves away from the flame. The drawing shows the parts involved in this reflex action.



5A In this reflex action, the sensory neurone is found at . . .

- 1 P
- 2 R
- 3 S
- 4 T

5B In this reflex action, the relay neurone is found at . . .

- 1 P
- 2 Q
- 3 R
- 4 T

5C In this reflex action, a synapse is found at . . .

- 1 N
- 2 P
- 3 Q
- 4 S

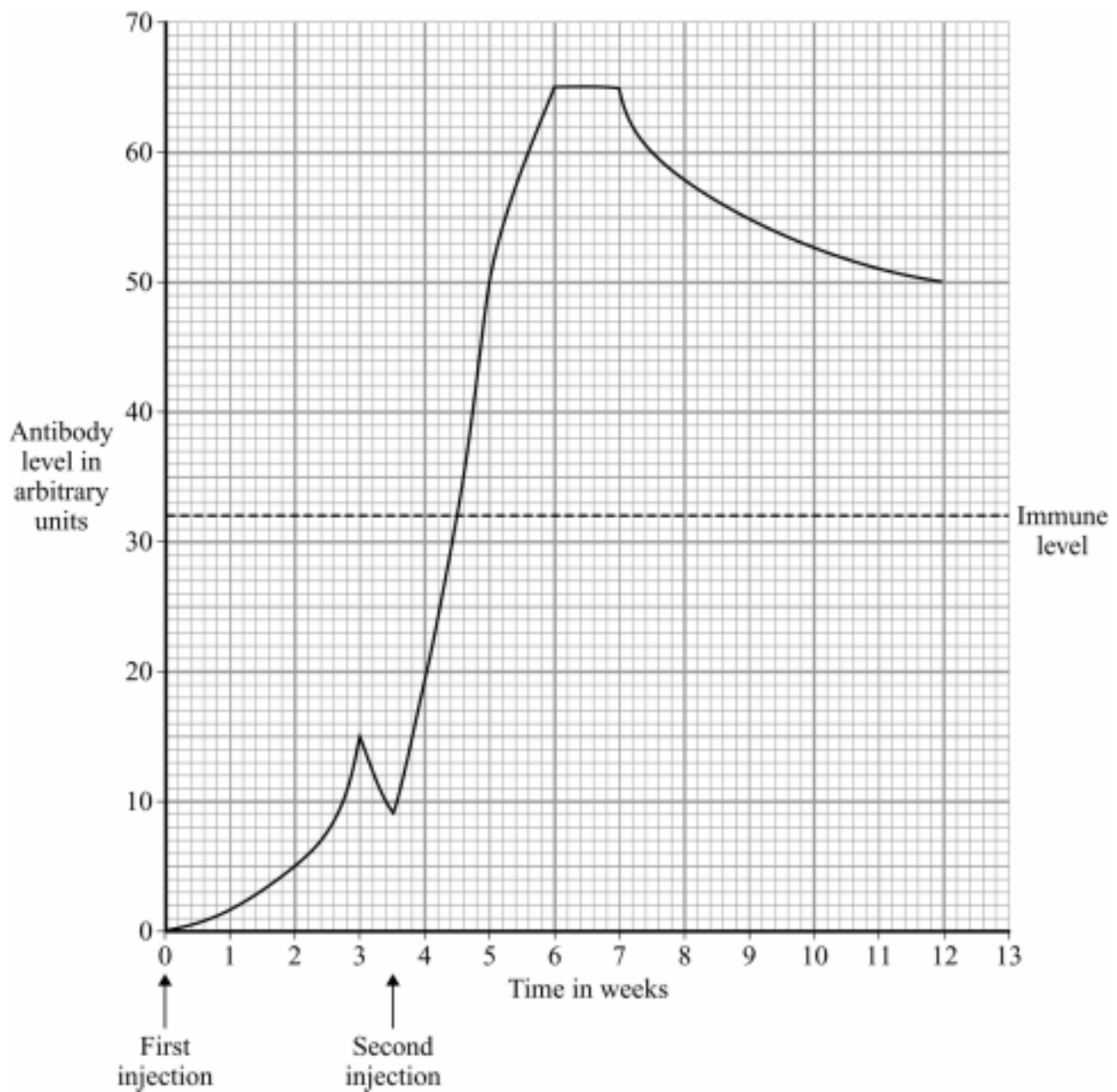
5D Which of the following describes the path taken by an impulse in this reflex action?

- 1 effector → motor neurone → relay neurone → sensory neurone
- 2 receptor → sensory neurone → relay neurone → motor neurone
- 3 sensory neurone → motor neurone → relay neurone → synapse
- 4 synapse → effector → relay neurone → sensory neurone

Turn over for the next question

QUESTION SIX

The graph shows the level of antibodies in a person's blood after a first injection and then a second injection (booster dose) a few weeks later.



6A How long after the first injection did it take to reach the immune level?

- 1 1 week
- 2 3.5 weeks
- 3 4.5 weeks
- 4 6 weeks

6B By how many arbitrary units did the antibody level rise after the second injection?

- 1 15
- 2 17
- 3 56
- 4 65

6C We are immune to a virus after the second injection because . . .

- 1 the number of antitoxins stays at a high level.
- 2 the number of antibodies in the body stays at a high level.
- 3 the virus is poisoned.
- 4 the white cells can rapidly produce antibodies if the virus enters the body.

6D Antibiotics cannot be used against viruses because . . .

- 1 viruses are too small.
- 2 viruses can mutate.
- 3 viruses live inside living cells.
- 4 viruses produce toxins.

QUESTION SEVEN

Thalidomide is a controversial drug.

7A Thalidomide was developed as . . .

- 1 a contraceptive pill.
- 2 a sleeping pill.
- 3 a slimming pill.
- 4 an antibiotic.

7B Thalidomide had not been tested for use by . . .

- 1 children.
- 2 heart patients.
- 3 obese people.
- 4 pregnant women.

7C Thalidomide caused . . .

- 1 breathing difficulties.
- 2 cancer.
- 3 deformed limbs in some babies.
- 4 heart attacks.

7D It has now been fully tested for use in treating . . .

- 1 high blood pressure.
- 2 infertility.
- 3 leprosy.
- 4 obesity.

Turn over for the next question

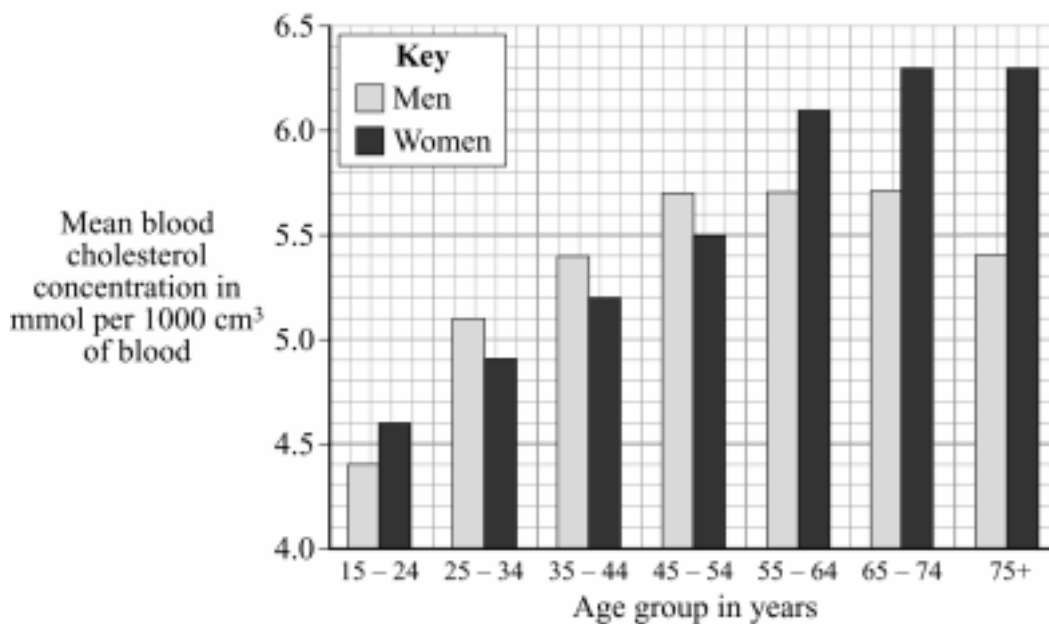
QUESTION EIGHT

The level of cholesterol in the blood is influenced by the amount and type of fat in the diet.

8A Blood cholesterol levels may be reduced by eating . . .

- 1 low density lipoprotein.
- 2 polyunsaturated fat.
- 3 salt.
- 4 saturated fat.

The graph shows the mean blood cholesterol concentrations of men and women in different age groups.



8B This data was obtained by measuring the blood cholesterol concentrations of large numbers of people.

Why were a large number of people used?

- 1 to calculate a mean
- 2 to find the highest cholesterol level
- 3 to get more reliable data
- 4 to make it a fair test

8C From this data, which group of people has the highest risk of developing heart disease?

- 1 men aged 45 years and over
- 2 men aged 75 years
- 3 women aged 65 years and over
- 4 women aged 75 years

8D An ancient Indian natural medicine called Gum Guggal is said by its manufacturer to reduce blood cholesterol concentration. The manufacturer wants to market Gum Guggal in the UK.

What must happen before the Gum Guggal is allowed to be advertised for sale as a cholesterol-reducing drug in the UK?

- 1 it must be tested for its cholesterol level
- 2 it must be tested for its purity
- 3 it must be trialled on animals
- 4 it must be trialled on human volunteers

Turn over for the next question

QUESTION NINE

The menstrual cycle is controlled by hormones.

9A Which hormone stimulates the wall of the uterus to increase in thickness?

- 1 FSH
- 2 LH
- 3 nicotine
- 4 oestrogen

9B Which hormone stimulates egg release?

- 1 FSH
- 2 LH
- 3 nicotine
- 4 oestrogen

9C Which organ produces FSH?

- 1 brain
- 2 ovary
- 3 pituitary gland
- 4 womb

9D Oestrogen can be used in contraceptive pills because . . .

- 1 it inhibits FSH production.
- 2 it inhibits LH production.
- 3 it stimulates FSH production.
- 4 it stimulates LH production.

END OF TEST

FOUNDATION TIER

Instructions on how to complete this answer sheet are given on the question paper. Please make sure you follow them carefully.

| QUESTION ONE | | 1 | 2 | 3 | 4 |
|--------------|---|-----------------------|-----------------------|-----------------------|-----------------------|
| A | contains light receptors | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | contains receptors sensitive to chemicals | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | contains sound receptors | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | contains temperature receptors | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION TWO | | 1 | 2 | 3 | 4 |
|--------------|-----------------|-----------------------|-----------------------|-----------------------|-----------------------|
| A | alcohol | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | carbon monoxide | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | cannabis | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | nicotine | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION THREE | | 1 | 2 | 3 | 4 |
|----------------|------------|-----------------------|-----------------------|-----------------------|-----------------------|
| A | antibody | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | antitoxin | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | blood clot | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | penicillin | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION FOUR | | 1 | 2 | 3 | 4 |
|---------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|
| A | arthritis | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | exercise | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | food | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | mass | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION FIVE | | 1 | 2 | 3 | 4 |
|---------------|----|-----------------------|-----------------------|-----------------------|-----------------------|
| A | 4 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | 14 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | 21 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | 26 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION SIX | | 1 | 2 | 3 | 4 |
|--------------|---------|-----------------------|-----------------------|-----------------------|-----------------------|
| A | James | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | John | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | Michael | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | Paul | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION SEVEN | | 1 | 2 | 3 | 4 |
|----------------|--|-----------------------|-----------------------|-----------------------|-----------------------|
| A | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION EIGHT | | 1 | 2 | 3 | 4 |
|----------------|--|-----------------------|-----------------------|-----------------------|-----------------------|
| A | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION NINE | | 1 | 2 | 3 | 4 |
|---------------|--|-----------------------|-----------------------|-----------------------|-----------------------|
| A | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

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Unit : BLY1A – Biology 1a

Date/Series :

Centre :

Candidate Number :

UCI :

Candidate Name :

For completion by the Examination Invigilator. Please fill this oval if the candidate is absent:

HIGHER TIER

▶ Instructions on how to complete this answer sheet are given on the question paper. Please make sure you follow them carefully. ◀

| QUESTION ONE | | 1 | 2 | 3 | 4 |
|--------------|---------|-----------------------|-----------------------|-----------------------|-----------------------|
| A | James | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | John | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | Michael | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | Paul | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION TWO | | 1 | 2 | 3 | 4 |
|--------------|--------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| A | being overweight | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | high blood cholesterol | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | high level of salt in the diet | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | lack of food | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION THREE | | 1 | 2 | 3 | 4 |
|----------------|--|-----------------------|-----------------------|-----------------------|-----------------------|
| A | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION FOUR | | 1 | 2 | 3 | 4 |
|---------------|--|-----------------------|-----------------------|-----------------------|-----------------------|
| A | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION FIVE | | 1 | 2 | 3 | 4 |
|---------------|--|-----------------------|-----------------------|-----------------------|-----------------------|
| A | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION SIX | | 1 | 2 | 3 | 4 |
|--------------|--|-----------------------|-----------------------|-----------------------|-----------------------|
| A | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION SEVEN | | 1 | 2 | 3 | 4 |
|----------------|--|-----------------------|-----------------------|-----------------------|-----------------------|
| A | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION EIGHT | | 1 | 2 | 3 | 4 |
|----------------|--|-----------------------|-----------------------|-----------------------|-----------------------|
| A | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| QUESTION NINE | | 1 | 2 | 3 | 4 |
|---------------|--|-----------------------|-----------------------|-----------------------|-----------------------|
| A | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| B | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| C | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| D | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

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GCSE
SCIENCE A (4461)/BIOLOGY (4411)
Objective Test Answer Key
BLY1A (Human Biology)
Specimen paper
Foundation Tier

| Question | Key | | | |
|----------|----------|---|----------|----------|
| One | A | contains light receptors | 2 | |
| | B | contains receptors sensitive to chemicals | 3 | |
| | C | contains sound receptors | 1 | |
| | D | contains temperature receptors | 4 | |
| Two | A | alcohol | 4 | |
| | B | carbon monoxide | 3 | |
| | C | cannabis | 2 | |
| | D | nicotine | 1 | |
| Three | A | antibody | 2 | |
| | B | antitoxin | 3 | |
| | C | blood clot | 4 | |
| | D | penicillin | 1 | |
| Four | A | arthritis | 4 | |
| | B | exercise | 1 | |
| | C | food | 2 | |
| | D | mass | 3 | |
| Five | A | 4 | 2 | |
| | B | 14 | 1 | |
| | C | 21 | 4 | |
| | D | 26 | 3 | |
| Six | A | James | 2 | |
| | B | John | 3 | |
| | C | Michael | 1 | |
| | D | Paul | 4 | |
| | A | B | C | D |
| Seven | 3 | 4 | 4 | 3 |
| Eight | 4 | 3 | 4 | 2 |
| Nine | 1 | 4 | 2 | 1 |

GCSE
SCIENCE A (4461)/BIOLOGY (4411)
 Objective Test Answer Key
BLY1A (Human Biology)
Specimen paper
 Higher Tier

| Question | Key | | | |
|----------|----------|--------------------------------|----------|----------|
| One | A | James | 2 | |
| | B | John | 3 | |
| | C | Michael | 1 | |
| | D | Paul | 4 | |
| Two | A | being overweight | 1 | |
| | B | high blood cholesterol | 2 | |
| | C | high level of salt in the diet | 3 | |
| | D | lack of food | 4 | |
| | A | B | C | D |
| Three | 4 | 3 | 4 | 2 |
| Four | 1 | 4 | 2 | 1 |
| Five | 4 | 1 | 1 | 2 |
| Six | 3 | 3 | 4 | 3 |
| Seven | 2 | 4 | 3 | 3 |
| Eight | 2 | 3 | 3 | 4 |
| Nine | 4 | 2 | 3 | 1 |