AQA GCSE Biology | 8461

SPECIFICATION POINT 4.3.1.1

Communicable (infectious) diseases

Past-paper questions

Tier	**Foundation**
Question groups	**33**
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.

4.3.1.1 Communicable (infectious) diseases

Question 01

January 2007 | BLY1F | Original Q4 | Legacy

4 (a) Use words from the box to complete the sentences about curing disease.

antibiotics	**antibodies**	**antitoxins**	**painkillers**	**statins**

The substances made by white blood cells to kill pathogens are called ..... .

The substances made by white blood cells to counteract poisons produced by pathogens are called ..... .

Medicines which kill bacteria are called ..... .

(3 marks)

(b) The MMR vaccine protects people against three diseases.

Write down the names of **two** of these diseases.

1 .....

2 .....

(2 marks)

(c) All vaccinations involve some risk.

The table shows the risk of developing harmful effects:

- from the disease if a child is **not** given the MMR vaccine;
- if a child **is** given the MMR vaccine.

Harmful effect	**Risk of getting the harmful effect from the disease (if not vaccinated)**	**Risk of getting the harmful effect from MMR vaccine**
Convulsions	1 in 200	1 in 1000
Meningitis	1 in 3000	Less than 1 in 1 000 000
Brain damage	1 in 8000	0

4.3.1.1 Communicable (infectious) diseases

Question 01 · continued

BLANK

A mother is considering if she should have her child vaccinated with the MMR vaccine.

Use information from the table to persuade the mother that she should have her child vaccinated.

.....

.....

.....

.....

(2 marks)

(d) The vaccine used to protect us from the Hepatitis B virus is produced by genetic engineering.

Yeast cells are used to produce the vaccine.

Use words from the box to complete the sentence.

chromosomes	**drugs**	**enzymes**	**genes**	**hormones**

To produce the vaccine ..... are used to cut out .....

from the Hepatitis B virus which are then inserted into the yeast cells.

(2 marks)

9

4.3.1.1 Communicable (infectious) diseases

Question 02

June 2007 | BLY1A | Original Q8 | Legacy

QUESTION EIGHT

Most infectious diseases can be prevented by vaccination.

8A What does a vaccine contain?

1 antibiotics

2 a mixture of toxins and antitoxins

3 dead or weakened microbes

4 white blood cells

8B Following a vaccination, the white cells produce . . .

1 antibiotics.

2 antibodies.

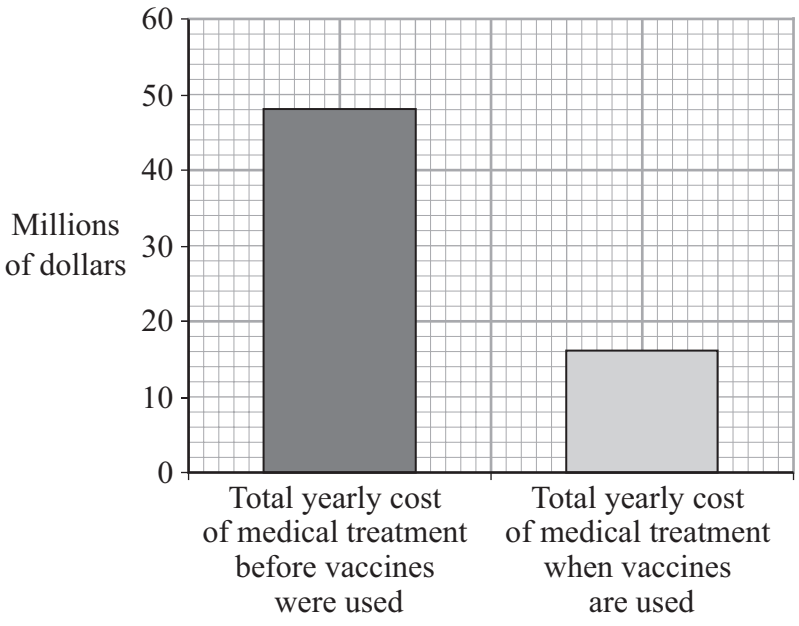
3 statins.

4 toxins.

4.3.1.1 Communicable (infectious) diseases

Question 02 · continued

The bar chart compares the total yearly cost of medical treatment for a disease in a country before vaccines were used and the total yearly cost when vaccines are used.



8C How much money is saved by the use of vaccines?

1 14 million dollars

2 16 million dollars

3 32 million dollars

4 48 million dollars

8D What is the most likely reason for the difference in cost?

1 Vaccines cure diseases.

2 Vaccines do not cost much to buy.

3 People who have been vaccinated never become ill.

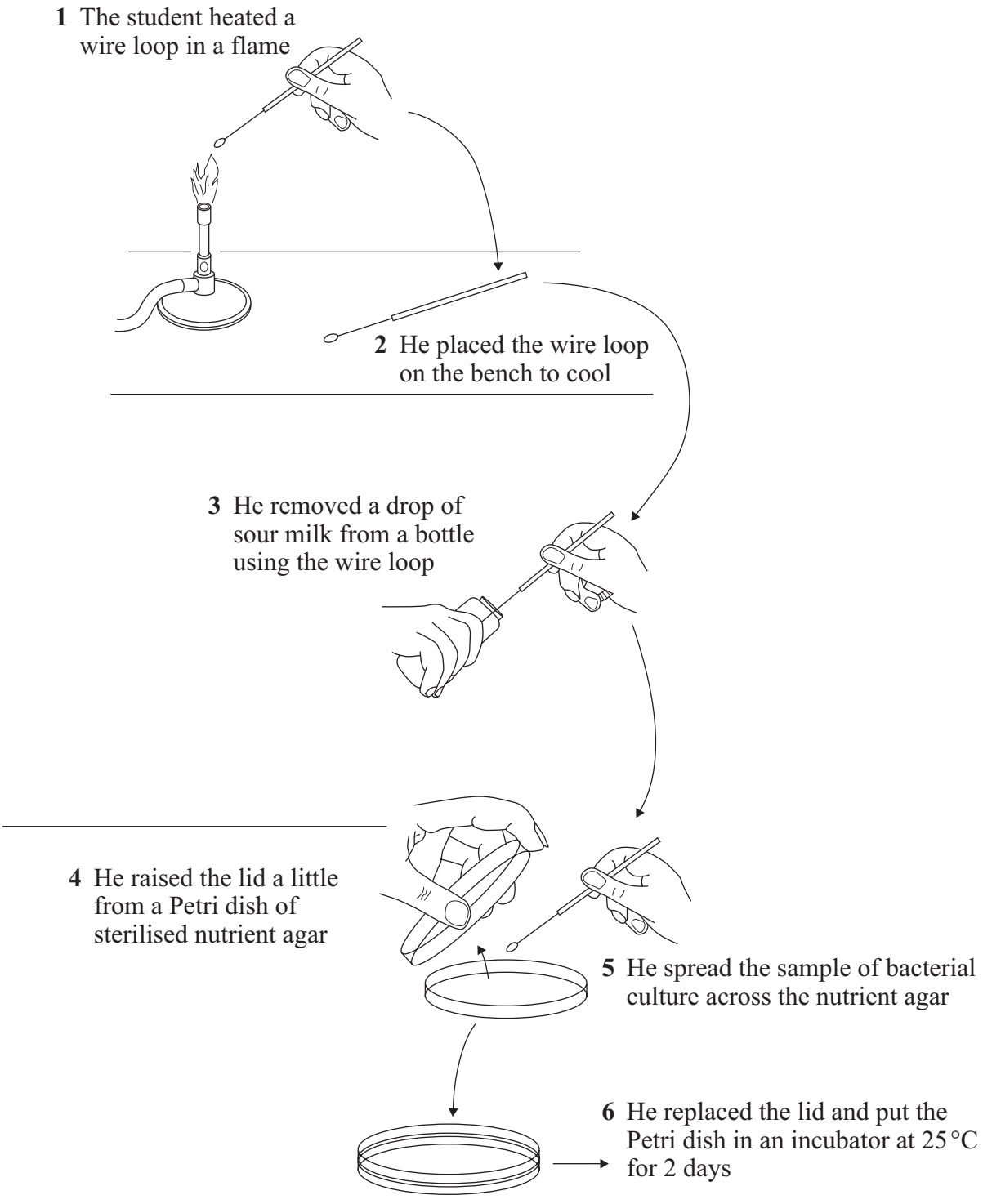
4 People who have been vaccinated need less treatment in hospital.

4.3.1.1 Communicable (infectious) diseases

Question 03

January 2008 | BLY3F | Original Q3 | Legacy

3 The diagram shows how a student transferred some sour milk from a bottle to a Petri dish of nutrient agar.



4.3.1.1 Communicable (infectious) diseases

Question 03 · continued

BLANK

List **A** gives four actions carried out by the student.
List **B** gives five possible effects of these actions.

Draw a straight line from each action in List **A** to its effect in List **B**.
Draw only **one** line from each action.

List A – Action	List B – Effect
	Risk of contamination with bacteria increased
Heating loop in flame	
	Risk of bacteria entering decreased
Placing loop on bench to cool	
	Kills bacteria
Only lifting lid of Petri dish a little	
	Prevents air entering
Placing Petri dish in incubator at 25 °C rather than 35 °C	
	Risk of growth of pathogens decreased

(4 marks)

4

4.3.1.1 Communicable (infectious) diseases

Question 04

June 2008 | BLY1F | Original Q5 | Legacy

5 Pathogens can enter the body and cause disease.

5 (a) (i) Name **one** type of medicine which kills bacteria in the body.

.....

(1 mark)

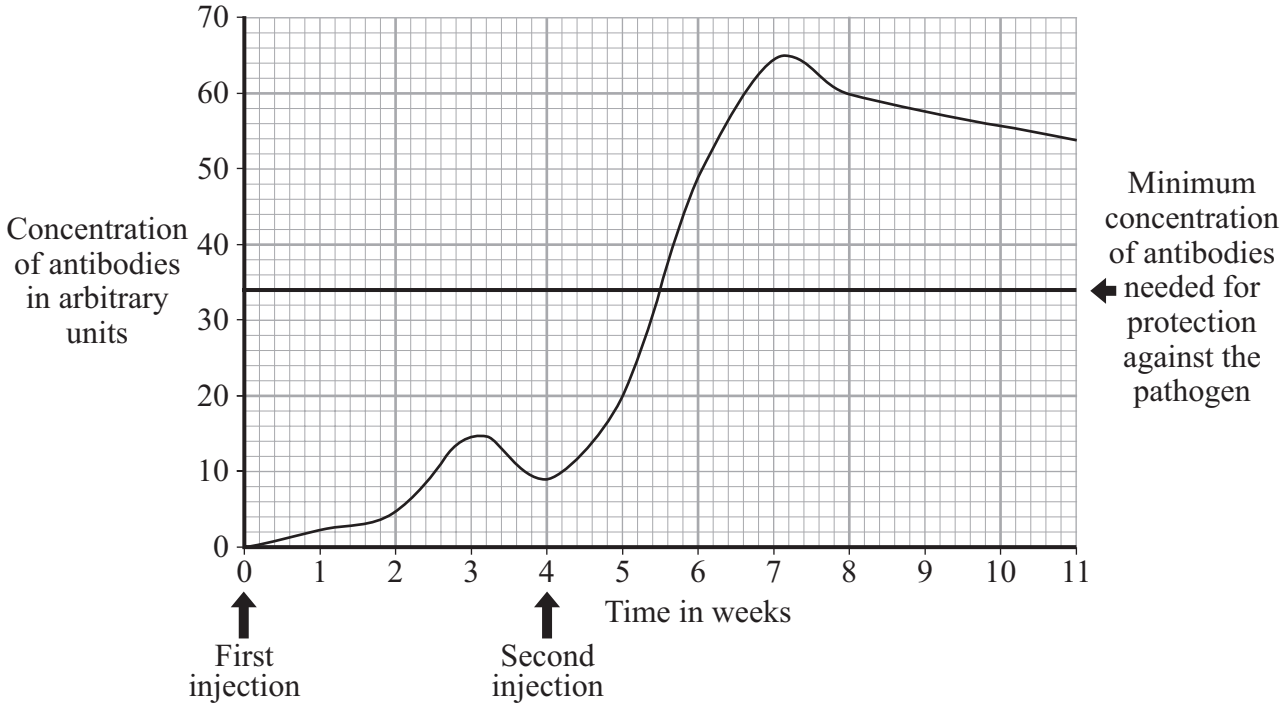
5 (a) (ii) Name **one** type of medicine which helps to relieve the symptoms of infectious disease.

.....

(1 mark)

5 (b) Vaccination protects us from pathogens.

The graph shows the concentration of antibodies in the blood of a person after two injections of vaccine given four weeks apart.



5 (b) (i) How long after the first injection did it take for the concentration of antibodies to reach the minimum level for protection against the pathogen?

..... weeks

(1 mark)

4.3.1.1 Communicable (infectious) diseases

Question 04 · continued

for mark

5 (b) (ii) Describe what happened to the concentration of antibodies in the blood from week 0 to week 7.

.....

.....

.....

.....

.....

.....

.....

(3 marks)

5 (b) (iii) Would you expect the concentration of antibodies to stay above the level needed for protection against the pathogen over the next ten years?

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

Give a reason for your answer.

.....

.....

(1 mark)

7

4.3.1.1 Communicable (infectious) diseases

Question 05

November 2008 | BLY1AP | Original Q9 | Legacy

QUESTION NINE

In the 1840s, many women died from infections after giving birth in hospitals.
The table shows data for two maternity wards in the same hospital over a two-year period.

	Ward P	Ward Q
Number of women who gave birth	296	308
Number of these women who died from infections	109	42

9A The number of women who survived in ward **Q** was . . .

1 42

2 187

3 266

4 350

9B A doctor called Semmelweiss noticed that medical students were delivering babies in ward **P** just after they had been dissecting corpses as part of their studies.
Only midwives delivered babies in ward **Q**.

Which is the best hypothesis to explain the higher death rate in ward **P**?

1 Students were carrying infections from corpses to women.

2 Midwives are better at delivering babies than students.

3 The higher number of deaths occurred by chance.

4 The women who gave birth in ward **P** were poorer than those in ward **Q**.

4.3.1.1 Communicable (infectious) diseases

9C Semmelweiss instructed all medical students in the hospital to wash their hands thoroughly before treating patients.

Which row in the table shows the effect that this might have had on the death rate in the two wards?

	Death rate in ward P			Death rate in ward Q		
	Increase	**No change**	**Decrease**	**Increase**	**No change**	**Decrease**
1	✓				✓	
2		✓				✓
3			✓		✓	
4			✓	✓		

9D In the 1980s, antibiotics were often used to kill pathogens to prevent infections from spreading. However, antibiotics are now less effective than in the 1980s.

This is because . . .

1 medical staff do not wash their hands as often.

2 antibiotics have become useless against viruses.

3 mutations in bacteria have made them resistant to antibiotics.

4 people have become immune to antibiotics.

END OF TEST

4.3.1.1 Communicable (infectious) diseases

Question 06

January 2009 | BLY1F | Original Q7 | Legacy

7 The MMR vaccine is used to protect children against measles, mumps and rubella.

7 (a) Complete the sentences about vaccination.

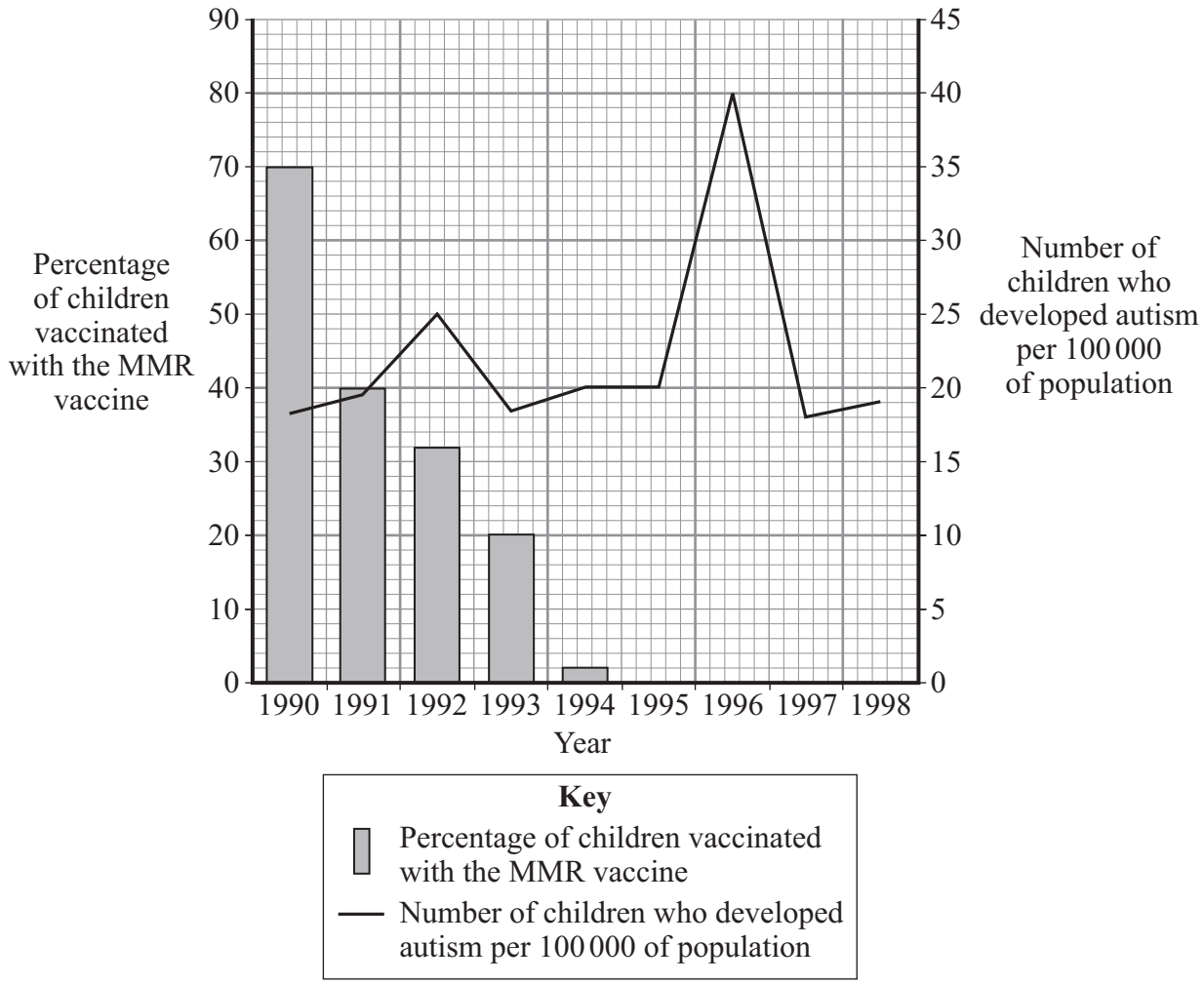
Vaccines stimulate white blood cells to produce ..... .

This makes children ..... to the pathogen.

(2 marks)

7 (b) In the 1990s, many people thought that the MMR vaccine caused autism in some children. As a result, the Japanese government stopped using the MMR vaccine.

The graph gives information about the percentage of children in Japan vaccinated with the MMR vaccine and the number of children who developed autism during the 1990s.



4.3.1.1 Communicable (infectious) diseases

Question 06 · continued

for mark

7 (b) (i) Describe how the percentage of children vaccinated with the MMR vaccine changed between 1990 and 1995.

.....

.....

.....

.....

.....

(2 marks)

7 (b) (ii) Does the data in the graph support a link between MMR vaccination and autism?

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

Explain the reason for your answer.

.....

.....

.....

.....

.....

(2 marks)

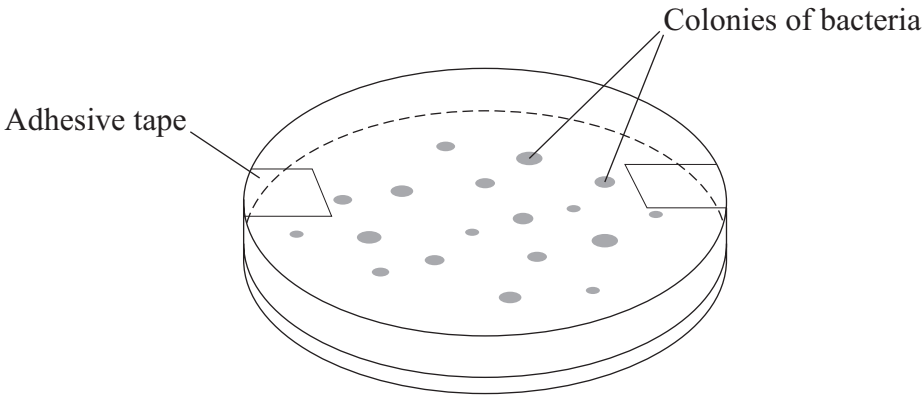
6

4.3.1.1 Communicable (infectious) diseases

Question 07

January 2009 | BLY3F | Original Q2 | Legacy

2 The diagram shows a Petri dish containing nutrient agar. Colonies of bacteria are growing on the nutrient agar.



Draw a ring around the correct answer to complete each sentence.

2 (a) (i) Agar jelly contains carbohydrates.

These carbohydrates are a source of [energy / minerals / protein] for the bacteria.

(1 mark)

2 (a) (ii) The dish is sealed with adhesive tape to prevent the entry of

[carbon dioxide / microorganisms / oxygen] from the air.

(1 mark)

2 (b) (i) The dish is placed in an incubator at a temperature of [10 °C / 25 °C / 75 °C].

(1 mark)

2 (b) (ii) This temperature is used rather than 35 °C so that it is

less likely that [fungi / pathogens / yeasts] will grow in the dish.

(1 mark)

4

4.3.1.1 Communicable (infectious) diseases

Question 08

June 2009 | BLY3F | Original Q3 | Legacy

3 (a) Microorganisms can be grown on agar jelly in a Petri dish.

List A gives three actions used when growing microorganisms.
List B gives four possible effects of these actions.

Draw a straight line from each action in **List A** to its effect in **List B**.

List A – Action	List B – Effect
	To reduce the growth of pathogens
The agar jelly is heated at 120°C for 30 minutes	
	To kill unwanted microorganisms
Make sure the temperature for growing the microorganisms is no higher than 25 °C	
	To prevent microorganisms from the air getting into the Petri dish
The lid of the Petri dish is held on with tape	
	To prevent oxygen entering the Petri dish

(3 marks)

3 (b) UHT milk is milk that has been heated to 135 °C, then cooled.

In an investigation, three sterile Petri dishes containing sterile agar jelly were set up as follows.

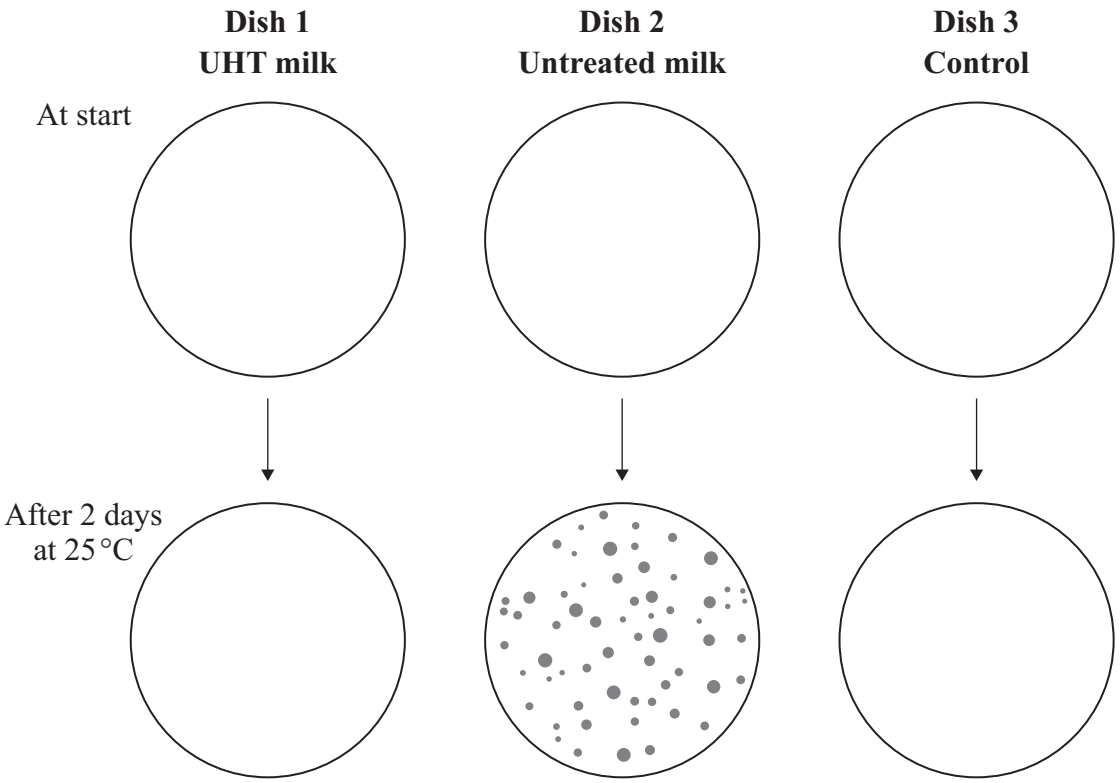
- UHT milk was added to dish **1**.
- Untreated milk was added to dish **2**.
- Dish **3** was left unopened as a control.
- The dishes were kept at 25 °C for two days.

The results are shown in the diagram on the opposite page.

4.3.1.1 Communicable (infectious) diseases

Question 08 · continued

for mark



3 (b) (i) Describe the difference in appearance between dishes **1** and **2** after two days.

.....

.....

(1 mark)

3 (b) (ii) Give **one** reason for this difference.

.....

.....

(1 mark)

3 (b) (iii) There was no change in the appearance of dish **3** after two days.

Give **one** reason why.

.....

.....

(1 mark)

6

4.3.1.1 Communicable (infectious) diseases

Question 09

November 2009 | BLY1AP | Original Q3 | Legacy

QUESTION THREE

Infectious diseases make us feel ill.

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

A antibody

B medicine

C pathogen

D toxin

	Description
1	drug used to relieve the symptoms of a disease
2	substance produced by white blood cells
3	harmful microorganism
4	poison which makes us feel ill

4.3.1.1 Communicable (infectious) diseases

Question 10

November 2009 | BLY1AP | Original Q7 | Legacy

QUESTION SEVEN

Most pandemics are caused by viruses.

7A Viral diseases . . .

1 are usually fatal.

2 cannot be treated by using antibiotics.

3 can be treated by using thalidomide.

4 never produce symptoms.

Read the passage about a bird-flu vaccine trial.

> The medical staff in a town in another country are being investigated about a vaccine trial that they carried out on 350 poor, homeless people last year. Investigators say that the trial involved an untested vaccine for the bird-flu virus.
>
> The investigators claim that the homeless people were paid 2 Euros to be tested with what they thought was a normal flu vaccine. It was actually a bird-flu vaccine.
>
> The director of a homeless centre in the town said that 21 people from his centre had died last year. The average number of deaths at the homeless centre is 8 in a year.

7B How many more deaths than the average were there in the homeless centre in the year of the trial?

1 8

2 13

3 21

4 29

4.3.1.1 Communicable (infectious) diseases

7C The medical staff probably chose this group of people for the vaccine trial because they were . . .

1 poor.

2 homeless.

3 suffering from flu.

4 immune to normal flu.

7D New strains of pathogens may cause pandemics because . . .

1 it is impossible to produce a vaccine for them.

2 unhygienic practices in hospitals are increasing.

3 people are not aware of how dangerous they are.

4 most people are not immune to them.

Turn over for the next question

4.3.1.1 Communicable (infectious) diseases

Question 11

March 2010 | BLY1AP | Original Q8 | Legacy

QUESTION EIGHT

Measles is a dangerous viral disease which kills about one person in every 1000 people infected. It gives long-term complications for many others. Worldwide, almost 350 000 people, mainly of school age, are killed by measles every year.

After a UK health scare, some parents refused to have their children vaccinated.

In England and Wales:

- in 2006 there were 756 cases of measles
- in 2007 there were 971 cases of measles
- in 2008 there were more than 1300 cases of measles.

8A Approximately how many people are **infected** by measles across the world each year?

1 971

2 350 000

3 350 000 000

4 It is impossible to tell from the data.

8B The rise in the number of people suffering from measles in the UK in recent years . . .

1 can be described as a pandemic.

2 is due to measles viruses mutating.

3 is due to antibiotic resistance.

4 can be described as an epidemic.

4.3.1.1 Communicable (infectious) diseases

Question 11 · continued

8C White blood cells can protect us from pathogens.

Which row in the table shows the way(s) in which this protection can occur?

	Ingesting pathogens	Producing antitoxins	Producing antibodies
1	✓	✓	✗
2	✓	✗	✓
3	✗	✓	✓
4	✓	✓	✓

8D School-age children are more likely to catch measles than adults.

This is because . . .

1 large numbers of children are often close together.

2 children have a poorly developed immune system.

3 the virus multiplies in the soil in playing fields.

4 new vaccines are less effective than older ones in protecting against measles.

4.3.1.1 Communicable (infectious) diseases

Question 12

June 2010 | BLY1AP | Original Q8 | Legacy

QUESTION EIGHT

Our bodies defend themselves against attack by pathogens.

8A Our white cells produce antibodies which destroy . . .

1 all types of bacteria and all types of viruses.

2 all types of bacteria but no viruses.

3 all types of viruses but no bacteria.

4 some types of bacteria and some types of viruses.

8B Our white cells also produce antitoxins which . . .

1 counteract poisons produced by pathogens.

2 destroy both bacteria and viruses.

3 destroy bacteria but not viruses.

4 ingest pathogens.

8C Antibiotics destroy . . .

1 all types of bacteria and all types of viruses.

2 some types of bacteria and some types of viruses.

3 some types of bacteria but no viruses.

4 some types of viruses but no bacteria.

8D Vaccines . . .

1 can be made from dead pathogens.

2 can give protection against bacteria but not viruses.

3 can give protection against viruses but not bacteria.

4 destroy pathogens.

4.3.1.1 Communicable (infectious) diseases

Question 13

June 2010 | BLY1F | Original Q9 | Legacy

9 Influenza is an infectious disease. The influenza virus often mutates.
This has made the World Health Organisation worried about another influenza *pandemic*.

9 (a) What is meant by a *pandemic*?

.....

.....

(1 mark)

9 (b) Explain why a mutation of the influenza virus might cause another influenza pandemic.

.....

.....

.....

.....

.....

.....

.....

.....

(3 marks)

4

4.3.1.1 Communicable (infectious) diseases

Question 14

March 2011 | BLY1AP | Original Q9 | Legacy

QUESTION NINE

Read the newspaper article published in 2009.

Swine Flu: How Serious a Threat?

The World Health Organisation says that a new strain of virus, the swine flu virus, has killed 150 people in Mexico. This shows that the virus can pass from human to human. One expert says that he expects the outbreak to develop into a pandemic.

9A A pandemic is an outbreak of a disease . . .

1 confined to a town.

2 confined to a region.

3 that will **not** spread.

4 that will spread all over the world.

9B The swine flu virus makes us ill because the virus . . .

1 produces antibodies.

2 produces toxins.

3 reproduces rapidly.

4 slows down our reactions.

9C The swine flu virus made many people ill because . . .

1 people were **not** immune to the swine flu virus.

2 painkillers do **not** work on viral diseases.

3 scientists had **not** produced a new antibiotic.

4 new strains of a virus are always more powerful than existing strains.

4.3.1.1 Communicable (infectious) diseases

Question 14 · continued

March 2011 | BLY1AP | Original Q9 | Legacy

9D Scientists have developed a swine flu vaccine.

This vaccine works because it . . .

1 destroys the virus.

2 produces antitoxins.

3 engulfs the virus.

4 stimulates the production of antibodies.

END OF TEST

4.3.1.1 Communicable (infectious) diseases

Question 15

June 2011 | BLY1F | Original Q9 | Legacy

9 The body's immune system protects us from diseases.

Describe the different ways in which white blood cells protect us from infectious diseases.

.....

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.....

.....

(4 marks)

4

4.3.1.1 Communicable (infectious) diseases

Question 16

November 2011 | BLY1AP | Original Q2 | Legacy

QUESTION TWO

Infectious diseases make us feel ill.

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

A antibodies

B antibiotics

C toxins

D painkillers

Bacteria make us feel ill because bacteria produce . . . **1** . . . .

To kill bacteria, a doctor might give a patient . . . **2** . . . .

To kill bacteria, our white blood cells produce . . . **3** . . . .

To relieve disease symptoms quickly, a doctor might give a patient . . . **4** . . . .

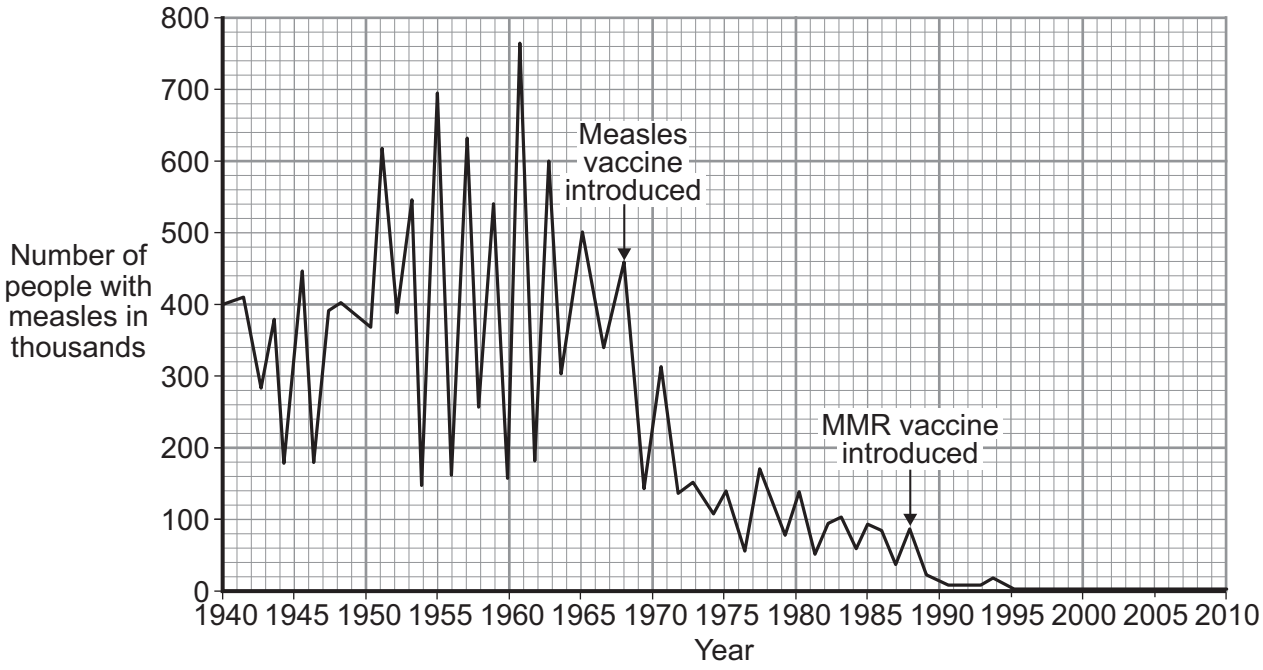
Turn over for the next question

4.3.1.1 Communicable (infectious) diseases

Question 17

January 2012 | BL1FP | Original Q8 | Legacy

8 The graph shows the number of people with measles in the UK between 1940 and 2010.



8 (a) Compare how effective introducing the measles vaccine was with introducing the MMR vaccine.

Use data from the graph.

.....

.....

.....

.....

.....

.....

.....

.....

(3 marks)

4.3.1.1 Communicable (infectious) diseases

Question 17 · continued

8 (b) The MMR vaccine was introduced in 1988.

Other than measles, which **two** diseases does the MMR vaccine protect against?

1 ..... 2 .....

(2 marks)

8 (c) To immunise someone against measles, a small quantity of the inactive measles pathogen is injected into the body.

Describe what happens in the body after immunisation to stop a person catching measles in the future.

.....

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.....

.....

.....

(3 marks)

8

4.3.1.1 Communicable (infectious) diseases

Question 18

June 2012 | BL1FP | Original Q7 | Legacy

7 Scientists at a drug company developed a new pain-killing drug, drug **X**.

7 (a) Painkillers do **not** cure infectious diseases.

Why?

.....

(1 mark)

7 (b) The scientists compared drug **X** with two other pain-killing drugs, drug **A** and drug **B**. In their investigation the scientists:

- chose 600 volunteers. The volunteers were all in pain
- gave 200 of the volunteers a standard dose of drug **A**
- gave 200 of the volunteers a standard dose of drug **B**
- gave 200 of the volunteers a standard dose of drug **X**.

Over the next seven hours the volunteers recorded how much pain they felt.

To get valid results the three groups of volunteers should be matched for as many factors as possible.

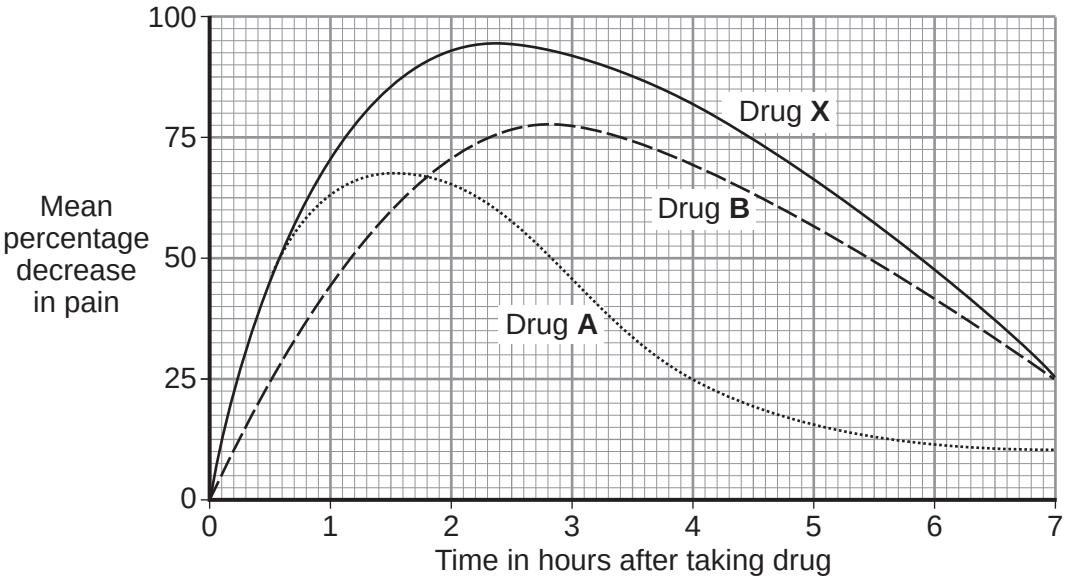
Suggest **two** of the factors that should be matched.

.....

.....

(2 marks)

7 (c) The graph shows the results of the investigation.



4.3.1.1 Communicable (infectious) diseases

Question 18 · continued

7 (c) (i) How much pain did the volunteers still feel, four hours after taking drug **A**?

..... percent
(1 mark)

7 (c) (ii) Give **one** advantage of taking drug **A** and **not** drug **B**.

.....

.....
(1 mark)

7 (c) (iii) Give **two** advantages of taking drug **B** and **not** drug **A**.

.....

.....

.....

.....
(2 marks)

7 (d) Drug **X** is much more expensive than both drug **A** and drug **B**.

A pharmacist advised a customer that it would be just as good to take drug **A** and drug **B** together instead of drug **X**.

Do you agree with the pharmacist's advice?

Give reasons for your answer.

.....

.....

.....

.....

.....

.....

.....
(3 marks)

10

4.3.1.1 Communicable (infectious) diseases

Question 19

January 2013 | BL1FP | Original Q3 | Legacy

3 Viruses and bacteria cause diseases in humans.

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

Organisms that cause disease are called

algae.

pathogens.

vaccines.

(1 mark)

3 (b) In August 2011 the United Nations gave a warning that there was a new strain of the bird flu virus in China.

Bird flu may kill humans. The new strain of the bird flu virus could cause a *pandemic* very quickly.

3 (b) (i) What is a *pandemic*?

Tick (✓) **one** box.

A disease affecting the people all over one country. ☐

A disease affecting hundreds of people. ☐

A disease affecting people in many countries. ☐

(1 mark)

3 (b) (ii) The swine flu virus is carried by pigs.

The bird flu virus is likely to spread much more quickly than the swine flu virus.

Suggest **one** reason why.

.....

.....

(1 mark)

4.3.1.1 Communicable (infectious) diseases

Question 19 · continued

3 (c) This notice is from a doctor's surgery.

Unfortunately, antibiotics will NOT get rid of your flu.

3 (c) (i) Why will antibiotics **not** get rid of flu?

.....

.....

(1 mark)

3 (c) (ii) The symptoms of flu include a sore throat and aching muscles.

What would a doctor give to a patient to relieve the symptoms of flu?

.....

(1 mark)

3 (c) (iii) It is important that antibiotics are **not** overused.

Explain why.

Use words from the box to complete the sentence.

antibody	**bacteria**	**immune**	**resistant**	**viruses**

Overuse of antibiotics might speed up the development

of ..... strains of ..... .

(2 marks)

7

4.3.1.1 Communicable (infectious) diseases

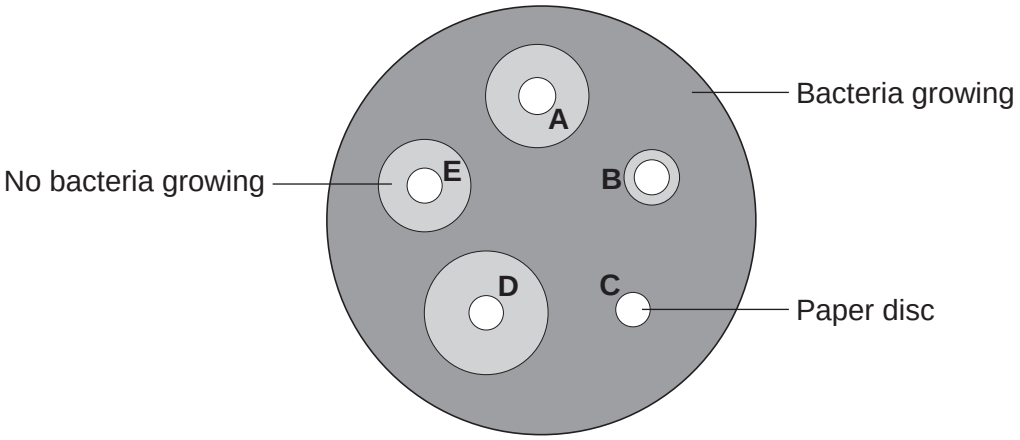
Question 20

June 2013 | BL1FP | Original Q3 | Legacy

3 Students in a school investigated the effect of five different antibiotics, **A**, **B**, **C**, **D** and **E**, on one type of bacterium.

The students:
- grew the bacteria on agar jelly in a Petri dish
- soaked separate paper discs in each of the antibiotics
- put the paper discs onto the bacteria in the Petri dish
- put the Petri dish into an incubator.

The diagram shows what the Petri dish looked like after 3 days.



3 (a) (i) What is the maximum temperature the incubator should be set at in the school?

Draw a ring around your answer.

10°C **25°C** **50°C**

(1 mark)

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

The incubator should **not** be set at a higher temperature because the higher

temperature might help the growth of

pathogens.
toxins.
viruses.

(1 mark)

4.3.1.1 Communicable (infectious) diseases

Question 20 · continued

3 (b) Which antibiotic, **A**, **B**, **C**, **D** or **E**, would be best to treat a disease caused by this type of bacterium?

Write your answer in the box. ☐

Give the reason for your answer.

.....

.....

(2 marks)

3 (c) Antibiotics **cannot** be used to treat diseases caused by viruses.

Why?

Tick (✓) **one** box.

Viruses are not pathogens ☐

There are too many different types of virus ☐

Viruses live inside cells ☐

(1 mark)

5

4.3.1.1 Communicable (infectious) diseases

Question 21

June 2013 | BL1FP | Original Q7 | Legacy

7 In the 1800s, many women died from disease after giving birth.

Dr Semmelweis compared the death rates of women in two hospital wards, **Ward A** and **Ward B**.

Table 1 shows some of the results.

Table 1

Year	Percentage (%) of women who died	
	Ward A	Ward B
1834	7.7	7.4
1836	7.5	7.8
1844	8.4	2.1
1846	11.3	2.8

Before 1840
Doctors and nurses worked in **Ward A** and in **Ward B**.
The doctors often worked in other wards with patients who had diseases.
The doctors did **not** wash their hands.

After 1840
Doctors only worked in **Ward A** and **not** in **Ward B**.
Only nurses worked in **Ward B**.
The nurses did **not** work in other wards with patients who had diseases.

7 (a) (i) Look at the data for **Ward A** and **Ward B** after 1840.

Describe the effect on death rate of having **only** nurses working in **Ward B** and **not** doctors.

To gain full marks you must refer to the data in **Table 1**.

.....

.....

.....

.....

(2 marks)

4.3.1.1 Communicable (infectious) diseases

Question 21 · continued

7 (a) (ii) Suggest an explanation for the difference you described in part **(a)(i)**.

.....

.....

.....

.....

(2 marks)

7 (b) In 1847, Dr Semmelweis told the doctors to wash their hands each time before they began to work in **Ward A**.

Table 2 shows the death rates in the two wards, after 1847.

Table 2

Year	Percentage (%) of women who died	
	Ward A	Ward B
1848	2.7	2.8
1849	2.0	1.9

Dr Semmelweis was right to tell the doctors to wash their hands.

What evidence is there to support Dr Semmelweis telling the doctors to wash their hands?

Use information from **Table 1** and **Table 2** in your answer.

.....

.....

.....

.....

.....

.....

(3 marks)

Question 7 continues on the next page

4.3.1.1 Communicable (infectious) diseases

Question 21 · continued

7 (c) In modern hospitals less than 0.1% of women die from disease after giving birth.

Medical understanding has improved since the 1850s to reduce the death rate.

Other than improvements in hygiene, give **two** reasons for the low death rate from infectious diseases in modern hospitals.

.....

.....

.....

.....

(2 marks)

9

4.3.1.1 Communicable (infectious) diseases

Question 22

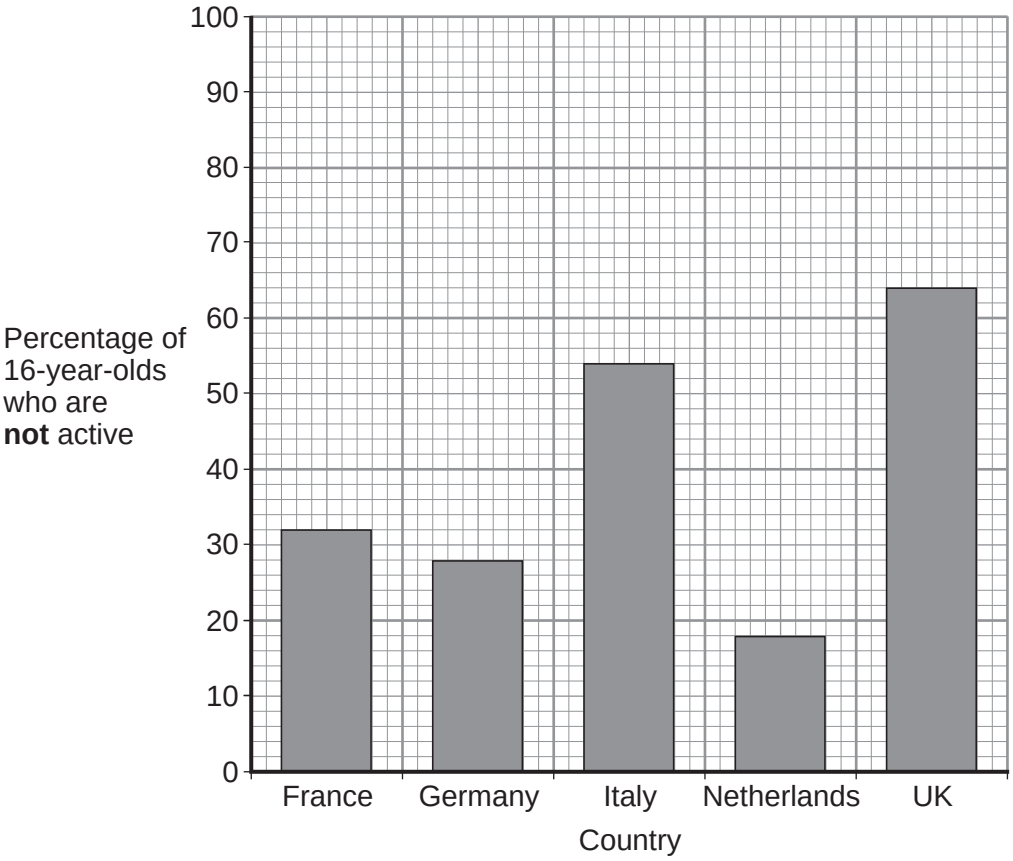
June 2015 | BL1FP | Original Q2 | Legacy

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]

..... %

4.3.1.1 Communicable (infectious) diseases

Question 22 · continued

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

4.3.1.1 Communicable (infectious) diseases

Question 22 · 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

4.3.1.1 Communicable (infectious) diseases

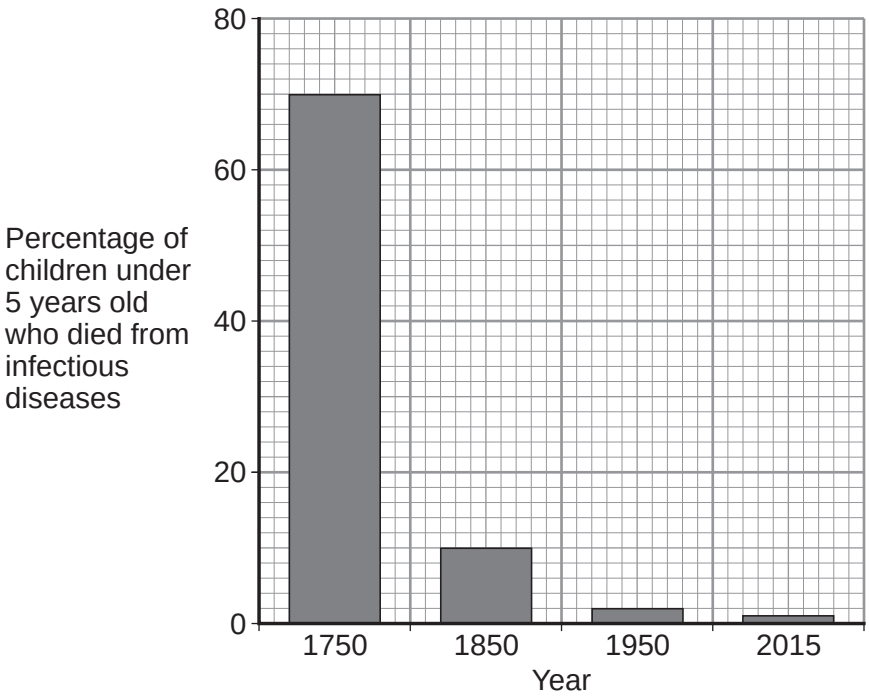
Question 23

June 2016 | BL1FP | Original Q5 | Legacy

5 Pathogens are microorganisms that cause infectious diseases.

5 (a) **Figure 7** shows the percentage of children under 5 years old who died from infectious diseases, in the UK, in four different years.

Figure 7



5 (a) (i) In the 1840s Dr Semmelweis introduced a new idea into hospitals.
What was this idea?

[1 mark]

Tick (✓) **one** box.

- hand-washing ☐
- immunisation ☐
- painkillers ☐

5 (a) (ii) Between 1750 and 1850 vaccinations were also developed.
What is in a vaccine?

[1 mark]

Tick (✓) **one** box.

- large amounts of dead pathogens ☐
- large amounts of live pathogens ☐
- small amounts of dead pathogens ☐

4.3.1.1 Communicable (infectious) diseases

Question 23 · continued

5 (a) (iii) The advances in medicine had an effect on death rate.

Describe the effect these advances had between 1750 and 1850.

To gain full marks you should include data from **Figure 7**.

[2 marks]

5 (b) Antibiotics were developed in the 1940s. Antibiotics kill bacteria.

5 (b) (i) Which **one** of the following is an antibiotic?

[1 mark]

Draw a ring around the correct answer.

cholesterol **penicillin** **thalidomide**

5 (b) (ii) The use of antibiotics has **not** reduced the death rate due to all diseases to zero.

Suggest **two** reasons why.

[2 marks]

1

2

5 (c) In school laboratories, bacteria should be grown at a maximum temperature of 25 °C.

Give **one** reason why companies testing new antibiotics grow bacteria at 37 °C.

[1 mark]

8

4.3.1.1 Communicable (infectious) diseases

Question 24

June 2017 | BL1FP | Original Q5 | Legacy

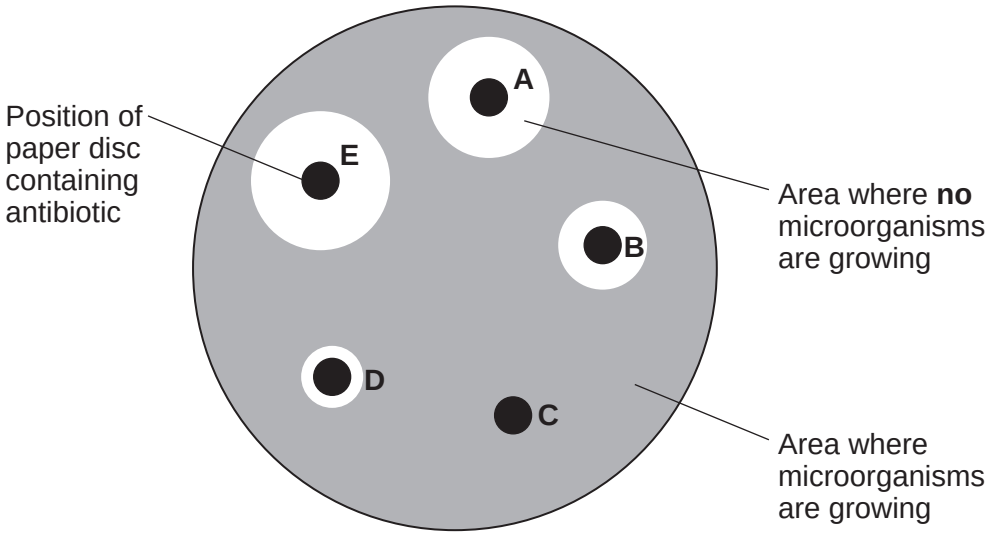
5 Some students investigated antibiotics.

The students:

- spread one type of microorganism on a sterile Petri dish containing an agar culture medium
- added five paper discs, each with one drop of a different antibiotic, **A**, **B**, **C**, **D** and **E**
- secured the lid on the dish with adhesive tape
- incubated the dish for 3 days at 25° C.

Figure 6 shows the Petri dish after the 3 days.

Figure 6



5 (a) Give **one** safety precaution that the students used in their investigation.

State why this safety precaution is needed.

[2 marks]

Safety precaution used _____

_____

Why the safety precaution is needed _____

_____

4.3.1.1 Communicable (infectious) diseases

Question 24 · continued

5 (b) One student made a conclusion:

'Doctors should always give antibiotic **E** to get rid of any disease.'

5 (b) (i) Describe the evidence from **Figure 6** which supports the student's conclusion.

[1 mark]

_____

_____

5 (b) (ii) Suggest **one** reason why the student's conclusion may **not** be correct.

[1 mark]

_____

_____

5 (c) Antibiotics can be given to farm animals as well as to humans.

Table 2 shows the mass of different antibiotics that have been given to farm animals and to humans.

Table 2

Antibiotic	Mass of antibiotic in kilograms	
	Given to farm animals	Given to humans
A	121 600	314 500
B	323 000	47 500
C	37 000	5 400
D	71 200	47 700
E	42 000	49 000

5 (c) (i) Write down **all** of the antibiotics, **A**, **B**, **C**, **D** or **E**, which have been used **more** for farm animals than for humans.

[1 mark]

_____

Question 5 continues on the next page

4.3.1.1 Communicable (infectious) diseases

Question 24 · continued

5 (c) (ii) Farmers in some countries use antibiotics to prevent disease in farm animals. This prevents the animals becoming ill or dying.

Suggest **one** other advantage to the farmer of giving antibiotics to farm animals.

[1 mark]

Tick (✓) **one** box.

The antibiotics will be passed to people who consume the animals. ☐

Healthy animals will produce a higher yield. ☐

The antibiotics will build up in the animals. ☐

5 (c) (iii) What is the possible effect of using too much antibiotic?

[1 mark]

Tick (✓) **one** box.

Animals become resistant to the antibiotic. ☐

Microorganisms become resistant to the antibiotic. ☐

People become immune to the antibiotic. ☐

People become resistant to the antibiotic. ☐

5 (d) The human body defends itself against pathogens using one type of blood cell.

5 (d) (i) Complete the sentence.

[1 mark]

Pathogens in the body can be killed by _____ blood cells.

4.3.1.1 Communicable (infectious) diseases

Question 24 · continued

5 (d) (ii) Give **two** ways in which the blood cells you have named in part **(d)(i)** protect the body from disease.

[2 marks]

Tick (✓) **two** boxes.

These blood cells produce antibiotics. ☐

These blood cells produce antibodies. ☐

These blood cells ingest pathogens. ☐

These blood cells reproduce pathogens. ☐

These blood cells produce toxins. ☐

10

4.3.1.1 Communicable (infectious) diseases

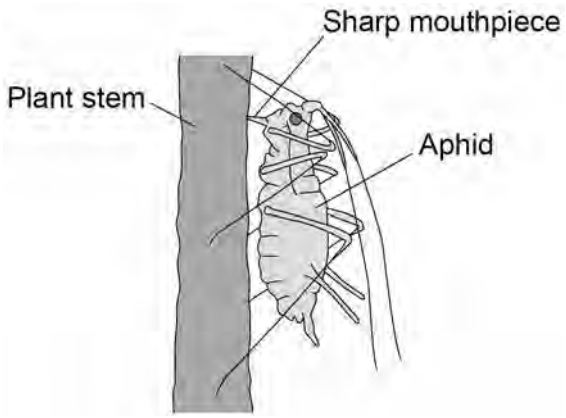
Question 25

June 2018 | 8461/1F | Original Q5

0 5 Aphids are small insects that carry pathogens.

Figure 7 shows an aphid feeding from a plant stem.

Figure 7



0 5 . 1 An aphid feeds by inserting its sharp mouthpiece into the stem of a plant.

After feeding, the mouthpiece of an aphid contains a high concentration of dissolved sugars.

Which part of the plant was the aphid feeding from?

[1 mark]

Tick **one** box.

- Palisade layer ☐
- Phloem ☐
- Stomata ☐
- Xylem ☐

4.3.1.1 Communicable (infectious) diseases

Question 25 · continued

0 5 . 2 What is the process that transports dissolved sugars around a plant?

[1 mark]

Tick **one** box.

- Filtration ☐
- Respiration ☐
- Translocation ☐
- Transpiration ☐

0 5 . 3 Plants infected with aphids have stunted growth.

Explain **one** way the removal of dissolved sugars from the stem of the plant causes stunted growth.

[2 marks]

0 5 . 4 Most aphids do not have wings when they hatch. After several generations, some aphids hatch which have wings and can fly.

Explain the advantage to the aphid of being able to fly.

[2 marks]

4.3.1.1 Communicable (infectious) diseases

Question 25 · continued

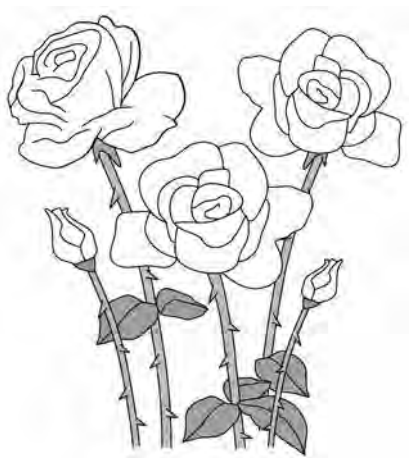
0 5 . 5 The leaves of some plants release oils onto their surface.

Suggest how the production of oil on the surface of a leaf may protect the plant from aphids.

[1 mark]

Figure 8 shows part of a rose plant.

Figure 8



0 5 . 6 Give **one** adaptation shown in **Figure 8** that helps the rose plant defend itself.

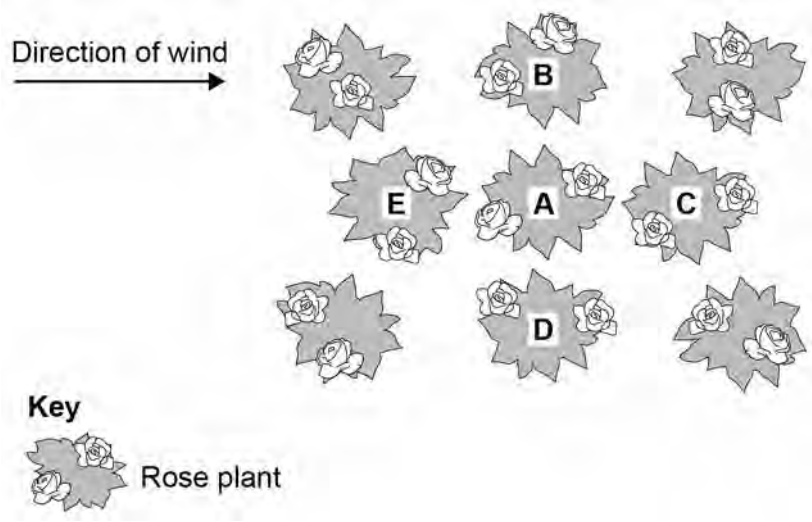
[1 mark]

4.3.1.1 Communicable (infectious) diseases

Question 25 · continued

Figure 9 shows a plan of a garden containing rose plants.

Figure 9



0 5 . 7 Plant **A** has the fungal disease rose black spot.

Which plant in **Figure 9** is the fungus likely to spread to first?

Give a reason for your answer.

[2 marks]

Plant _____

Reason _____

0 5 . 8 Suggest **one** way the gardener could reduce the spread of rose black spot to the other plants in the garden.

[1 mark]

11

4.3.1.1 Communicable (infectious) diseases

Question 26

June 2019 | 8461/1F | Original Q8

0 8 Mosquitoes carry a pathogen that causes malaria.

0 8 . 1 What type of pathogen causes malaria?

[1 mark]

Tick (✓) **one** box.

A bacterium ☐

A fungus ☐

A protist ☐

A virus ☐

Mosquito nets can help prevent the spread of malaria.

Table 7 shows the results of a study in one area of Africa.

Table 7

Total number of people in the study	Number of people who use mosquito nets when sleeping	Percentage of people with malaria	
		Who use mosquito nets when sleeping	Who do NOT use mosquito nets when sleeping
476	426	1.2	40

A newspaper made the following statement:

'Study shows mosquito nets are scientifically proven to prevent malaria.'

0 8 . 2 Give **one** piece of evidence that supports the statement.

[1 mark]

4.3.1.1 Communicable (infectious) diseases

Question 26 · continued

June 2019 | 8461/1F | Original Q8

0 8 . 3 Suggest **one** reason why the statement may **not** be valid.

[1 mark]

Table 8 shows information about the number of deaths from malaria in the same area of Africa.

Table 8

Year	Number of deaths from malaria per 100 000 people
2005	161
2007	136
2009	114
2011	97
2013	94
2015	92

0 8 . 4 Predict the number of people per 100 000 who died from malaria in 2017 if the trend stayed the same.

[1 mark]

Number of people per 100 000 = _____

0 8 . 5 Use of mosquito nets has helped to reduce the number of deaths from malaria each year.

Suggest **one** other reason for the reduced number of deaths from malaria each year.

[1 mark]

4.3.1.1 Communicable (infectious) diseases

Question 26 · continued

0 8 . 6 Describe how the human body:

- prevents pathogens from entering
- defends itself against pathogens inside the body.

[6 marks]

11

4.3.1.1 Communicable (infectious) diseases

Question 27

November 2020 | 8461/1F | Original Q3

0 3 The human body can defend itself against microorganisms that cause disease.

Viruses are one type of microorganism that cause disease.

0 3 . 1 Name **one** type of microorganism that causes disease in humans.

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

[1 mark]

---

0 3 . 2 Which **two** defence systems prevent microorganisms infecting the human body?

[2 marks]

Tick (✓) **two** boxes.

- Air is warmed as it is breathed into the lungs. ☐
- Hairs on the skin trap microorganisms. ☐
- Hydrochloric acid is produced by the stomach. ☐
- Teeth in the mouth crush and kill microorganisms. ☐
- The skin is a barrier covering the whole body. ☐

0 3 . 3 If microorganisms enter the human body the immune system can destroy the microorganisms.

How does the immune system destroy microorganisms?

[1 mark]

Tick (✓) **one** box.

- Platelets kill the microorganisms. ☐
- Red blood cells stick to the microorganisms. ☐
- White blood cells engulf the microorganisms. ☐

4.3.1.1 Communicable (infectious) diseases

Question 27 · continued

0 3 . 4 Vaccinations prevent people becoming ill with diseases such as measles.

Complete the sentences.

[2 marks]

Choose answers from the box.

active	**fast**	**resistant**	**slow**	**weakened**

In a vaccine the measles virus is _____.

If the measles virus enters the body after vaccination the immune system reaction will be _____.

0 3 . 5 How is the measles virus spread from one person to another?

[1 mark]

_____

_____

Question 3 continues on the next page

4.3.1.1 Communicable (infectious) diseases

Question 27 · continued

Doctors investigated the spread of the virus that causes chickenpox.

The first symptom of chickenpox after exposure to the virus is spots on the body.

23 children were playing together at a party.

On the day of the party one of the children developed chickenpox spots.

Every two days after the party, the doctors recorded when the other 22 children first showed chickenpox spots.

Table 1 shows the results.

Table 1

Day when chickenpox spots first showed	Number of children
2	0
4	0
6	0
8	0
10	1
12	1
14	6
16	4
18	2
20	0
Total	**14**

0 3 . 6 What was the range for the days on which children first showed chickenpox spots?

Use **Table 1**.

[1 mark]

From day _____ to day _____

0 3 . 7 Incubation time is the usual time from exposure to a pathogen until the first symptoms appear.

Suggest the most likely incubation time for chickenpox.

[1 mark]

Incubation time = _____ days

4.3.1.1 Communicable (infectious) diseases

Question 27 · continued

0 3 . 8 Suggest **one** reason why some of the children did **not** develop chickenpox.

[1 mark]

0 3 . 9 One mother gave antibiotics to her child who had chickenpox.

Suggest why this child did **not** recover more quickly than the other children who had chickenpox.

[1 mark]

11

Turn over for the next question

4.3.1.1 Communicable (infectious) diseases

Question 28

November 2021 | 8461/1F | Original Q2

0 2 Viruses cause disease.

0 2 . 1 What name is given to microorganisms that cause disease?

[1 mark]

Tick (✓) **one** box.

- Pathogens ☐
- Predators ☐
- Prokaryotes ☐

0 2 . 2 How do viruses cause the symptoms of disease?

[1 mark]

Tick (✓) **one** box.

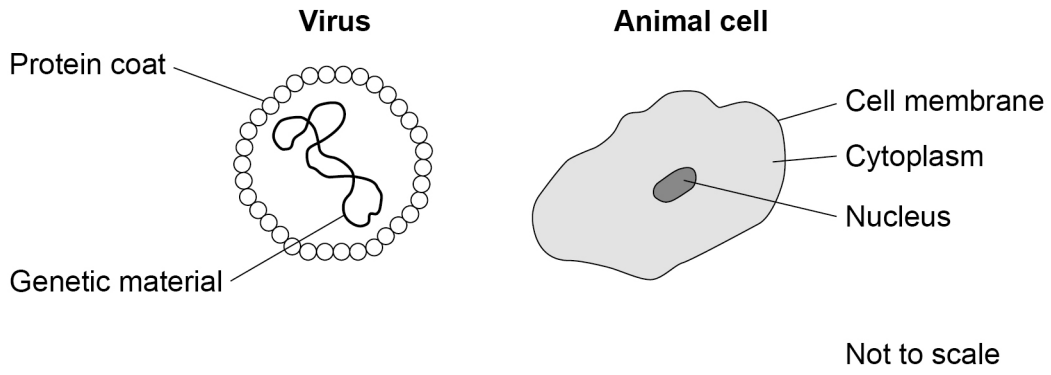
- Viruses engulf white blood cells, destroying them. ☐
- Viruses produce antibodies that damage tissues. ☐
- Viruses reproduce inside cells, damaging them. ☐

4.3.1.1 Communicable (infectious) diseases

Question 28 · continued

Figure 4 shows a virus and an animal cell.

Figure 4



0 2 . 3 Suggest **one** reason why viruses are **not** classed as cells.

[1 mark]

A vaccine can protect humans from a viral disease.

0 2 . 4 What does the vaccine contain?

[1 mark]

Tick (✓) **one** box.

- A toxic form of a virus ☐
- A weakened form of a virus ☐
- An active form of a virus ☐

Question 2 continues on the next page

4.3.1.1 Communicable (infectious) diseases

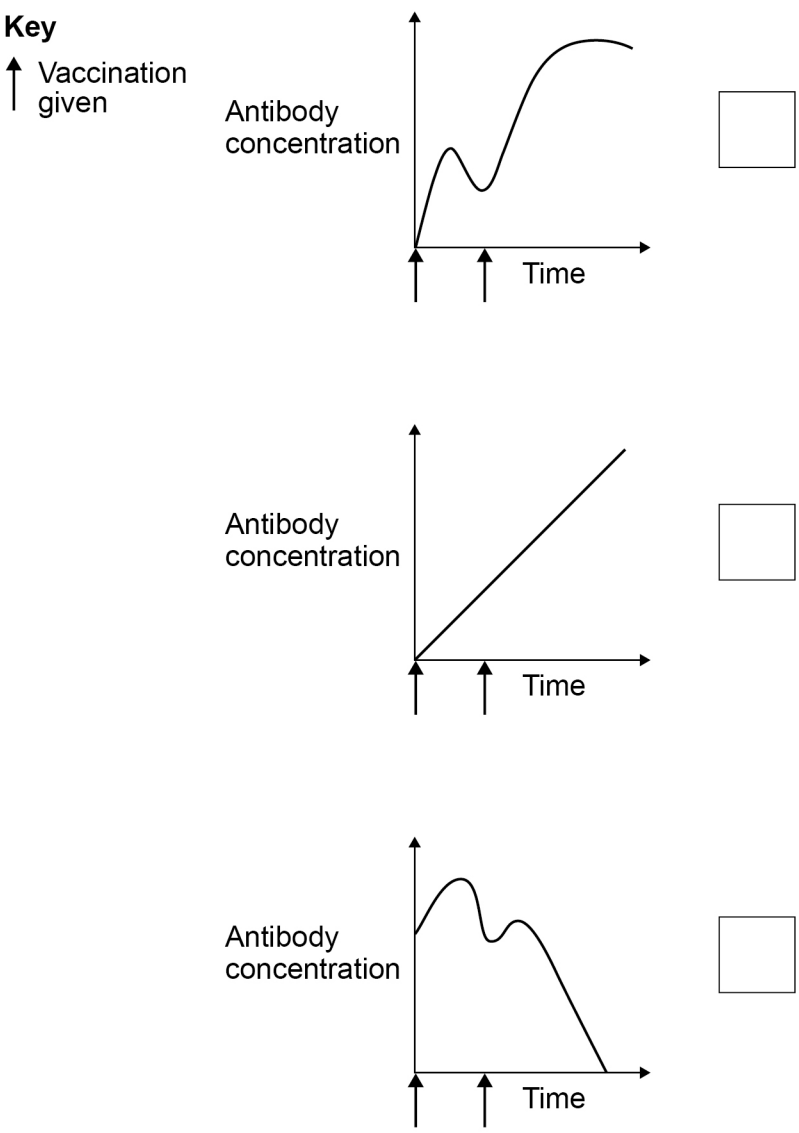
Question 28 · continued

In some cases, a first vaccination needs to be followed by a second vaccination some time later.

0 2 . 5 Which graph shows how the concentration of antibodies in a person's blood changes after the first and second vaccinations?

[1 mark]

Tick (✓) **one** box.



4.3.1.1 Communicable (infectious) diseases

Question 28 · continued

Tobacco mosaic virus (TMV) causes disease in plants.

TMV affects the rate of photosynthesis in plants.

0 2 . 6 Which part of a plant shows discolouration caused by TMV?

[1 mark]

Tick (✓) **one** box.

- Flower ☐
- Leaf ☐
- Root ☐

Question 2 continues on the next page

4.3.1.1 Communicable (infectious) diseases

Question 28 · continued

Table 1 shows the rate of photosynthesis in four different tobacco plants.

Table 1

Tobacco plant	Level of TMV infection in plant	Rate of photosynthesis in arbitrary units
A	None	15
B	Mild	13
C	Medium	7
D	High	3

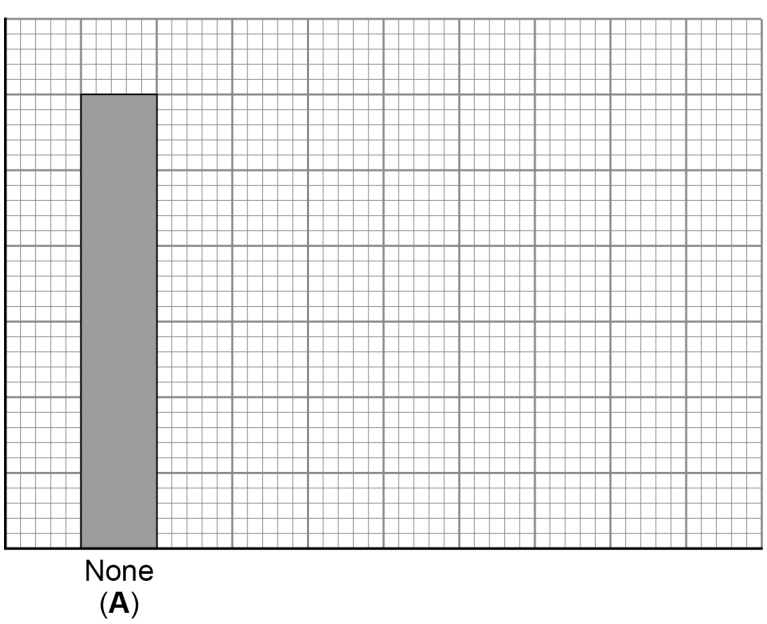
0 2 . 7 Complete **Figure 5**.

You should:

- label the y-axis
- add the correct scale to the y-axis
- plot the data from **Table 1**
- label each bar.

[5 marks]

Figure 5



4.3.1.1 Communicable (infectious) diseases

Question 28 · continued

0 2 . 8 What conclusion can be made from the data in **Table 1**?

[1 mark]

0 2 . 9 Explain why a high level of TMV infection reduces growth in a plant.

[2 marks]

14

Turn over for the next question

4.3.1.1 Communicable (infectious) diseases

Question 29

June 2022 | 8461/1F | Original Q1

0 1 HIV (Human Immunodeficiency Virus) is a pathogen.

0 1 . 1 How is HIV spread from one person to another person?

[1 mark]

Tick (✓) **one** box.

Coughing ☐

Sexual intercourse ☐

Touching door handles ☐

Table 1 shows information about new cases of HIV diagnosed in the UK.

Table 1

Year	Number of new HIV cases
2010	2642
2014	2767
2018	1530

0 1 . 2 Describe what happened to the number of new cases of HIV from 2010 to 2018.

[2 marks]

4.3.1.1 Communicable (infectious) diseases

Question 29 · continued

0 1 . 3 What could cause a **decrease** in the number of new HIV cases in the future?

[1 mark]

Tick (✓) **one** box.

A higher population of people in the UK ☐

A lower number of trained HIV nurses ☐

Better education on how to prevent the spread of HIV ☐

0 1 . 4 Scientists have been working to produce a vaccine for HIV for many years.

How could a vaccine work to prevent a person being infected with HIV?

Write the stages **A**, **B**, **C**, **D** and **E** in the correct order.

[3 marks]

The first stage has been completed for you.

A Antibodies attach to the inactive virus.

B Antibodies destroy the inactive virus.

C An inactive form of the virus is injected into the body.

D If the active virus enters the body, antibodies are produced quickly.

E White blood cells produce antibodies to the inactive virus.

C ⟶ _____ ⟶ _____ ⟶ _____ ⟶ _____

Question 1 continues on the next page

4.3.1.1 Communicable (infectious) diseases

Question 29 · continued

0 1 . 5 When scientists produce a vaccine for a disease the vaccine is tested on live animals.

What is the next stage in testing the vaccine?

[1 mark]

Tick (✓) **one** box.

- Testing on cells in a laboratory ☐
- Testing on healthy volunteers ☐
- Testing on the whole human population ☐

0 1 . 6 A vaccine for HIV is important because it is difficult to develop safe drugs to destroy viruses.

Why is it difficult to develop safe drugs to destroy viruses?

[1 mark]

Tick (✓) **one** box.

- Drugs that destroy viruses also damage body tissues. ☐
- There are too many viruses for the drugs to destroy. ☐
- Viruses are too big for the drugs to destroy. ☐

4.3.1.1 Communicable (infectious) diseases

Question 29 · continued

0 1 . 7 Some drugs originated from plants.

Draw **one** line from each drug to the plant the drug originated from.

[2 marks]

Drug	Plant the drug originated from
Aspirin	Foxglove
	Rose
Digitalis	Tobacco
	Willow

11

4.3.1.1 Communicable (infectious) diseases

Question 30

0 2 Viruses cause disease.

0 2 . 1 What name is given to microorganisms that cause disease?

[1 mark]

Tick (✓) **one** box.

- Pathogens ☐
- Predators ☐
- Producers ☐

0 2 . 2 The body has defences to stop viruses entering.

Draw **one** line from each defence to the part of the body that provides the defence.

[2 marks]

Defence	Part of the body that provides the defence
A physical barrier that stops viruses entering	Brain
Mucus that traps viruses	Heart
	Nose
	Skin

4.3.1.1 Communicable (infectious) diseases

Question 30 · continued

Some viruses can cause tumours to develop.

0 2 . 3 Complete the sentence.

Choose the answer from the box.

[1 mark]

digestion	division	metabolism

A tumour can form when changes to cells cause uncontrolled cell _____.

0 2 . 4 Malignant tumours are cancers.

Which **two** sentences describe malignant tumours?

[2 marks]

Tick (✓) **two** boxes.

- Malignant tumours are only found in the reproductive system. ☐
- Malignant tumours contain digestive enzymes. ☐
- Malignant tumours do not change in size. ☐
- Malignant tumours have cells that can spread to other parts of the body. ☐
- Malignant tumours may form secondary tumours. ☐

Question 2 continues on the next page

Question 30 · continued

HPV is a virus that can cause one type of cancer in females.

In the UK since 2008, most 12 to 13-year-old females have been vaccinated against HPV.

Scientists investigated the percentage of 16 to 18-year-old females with HPV.

Table 2 shows the results.

Table 2

Year	Percentage (%) of 16 to 18-year-old females with HPV
2010	8.2
2012	3.2
2014	2.0
2016	1.6

0 2 . 5 What does **Table 2** show about the percentage of females with HPV from 2010 to 2016?

[1 mark]

0 2 . 6 Suggest the reason for the change you described in Question **02.5**.

[1 mark]

4.3.1.1 Communicable (infectious) diseases

Question 30 · continued

The HPV vaccine contains an inactive form of the virus.

The inactive form of the virus is injected into the body.

0 2 . 7 Which part of the blood responds to the inactive virus?

[1 mark]

Tick (✓) **one** box.

- Platelets ☐
- Red blood cells ☐
- White blood cells ☐

0 2 . 8 What is produced by the body in response to the inactive virus?

[1 mark]

Tick (✓) **one** box.

- Antibiotics ☐
- Antibodies ☐
- Antiseptics ☐

0 2 . 9 Suggest **one** reason why some **parents** refuse to allow their children to have the HPV vaccine.

Do **not** refer to the pain of the injection in your answer.

[1 mark]

_____

_____

11

4.3.1.1 Communicable (infectious) diseases

Question 31

June 2024 | 8461/1F | Original Q2

0 2 Pathogens cause disease.

0 2 . 1 How does the skin defend the human body against pathogens?

[1 mark]

The stomach contains acid to kill pathogens.

A scientist investigated the effect of acid on the survival of bacteria.

This is the method used.

1. Prepare four test tubes each with 10 cm^3 of culture solution.
2. Use acid to adjust the pH of the solutions to be pH1, pH2, pH3 and pH5
3. Add 1 cm^3 of bacteria mixture to each test tube.
4. Take a 0.1 cm^3 sample from each test tube and record the number of live bacteria.
5. Keep the test tubes at 37 °C for 24 hours.
6. Repeat step 4.

Table 1 shows some of the results.

Table 1

Time in hours	Number of live bacteria			
	pH1	pH2	pH3	pH5
0	210	210	210	216
24	23	**X**	63	185

4.3.1.1 Communicable (infectious) diseases

Question 31 · continued

0 2 . 2 What fraction of the bacteria present at 0 hours for **pH3** survived for 24 hours?

Give your answer in its simplest form.

[2 marks]

Fraction surviving = _____

0 2 . 3 How many more bacteria were killed at pH1 than at pH5 in 24 hours?

Complete the following steps.

[3 marks]

Calculate the number of bacteria killed at pH1 _____

Calculate the number of bacteria killed at pH5 _____

Calculate how many more bacteria were killed at pH1 than at pH5 _____

Number = _____

0 2 . 4 A student calculated value **X** in **Table 1** to be 43

Suggest how the student calculated this value.

[2 marks]

8

4.3.1.1 Communicable (infectious) diseases

Question 32

June 2025 | 8461/1F | Original Q3

0 3 Blood contains different types of cell.

0 3 . 1 Complete the sentences.

Choose answers from the box.

[2 marks]

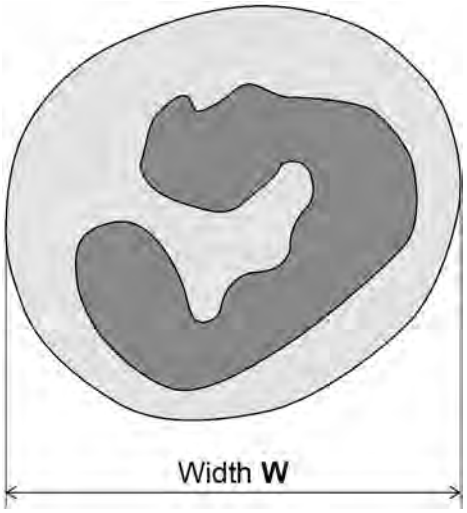
antibiotics	**antitoxins**	**painkillers**	**pathogens**

White blood cells defend the body against _____.

Some white blood cells release chemicals that neutralise toxins. These chemicals are called _____.

0 3 . 2 **Figure 3** shows a white blood cell.

Figure 3



The image of the white blood cell in **Figure 3** is magnified 4000 times.

4.3.1.1 Communicable (infectious) diseases

Question 32 · continued

Calculate the real width of the white blood cell.

[4 marks]

Complete the following steps.

Measure width **W** in millimetres (mm).

Width **W** = _____ mm

Convert your measurement to micrometres (µm).

1 millimetre (mm) = 1000 micrometres (µm).

_____

_____

Width **W** in micrometres = _____ µm

Calculate the real width of the white blood cell.

Use the equation:

$$\text{real width} = \frac{\text{width } \mathbf{W} \text{ (µm)}}{\text{magnification}}$$

_____

_____

_____

_____

Real width = _____ µm

Question 32 · continued

Table 3 shows information about different types of blood vessel.

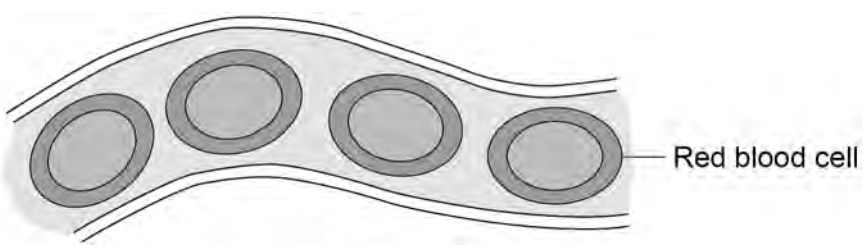
Table 3

Blood vessel	Width of blood vessel in micrometres (µm)	Pressure of blood travelling through the blood vessel
Artery	10 000	High
Capillary	10	Low
Vein	20 000	Very low

0 3 . 3 The width of a red blood cell is 8 µm.

Figure 4 shows red blood cells in one type of blood vessel.

Figure 4



Which type of blood vessel is shown in **Figure 4**?

Use **Table 3**.

[1 mark]

Tick (✓) **one** box.

Artery ☐

Capillary ☐

Vein ☐

4.3.1.1 Communicable (infectious) diseases

Question 32 · continued

0 3 . 4 Explain why arteries need to have thick walls.

Use **Table 3**.

[2 marks]

Coronary arteries in the heart can become narrowed.

0 3 . 5 What happens inside coronary arteries to cause them to become narrowed?

[1 mark]

0 3 . 6 Explain why narrowed coronary arteries can be dangerous.

[2 marks]

Question 3 continues on the next page

4.3.1.1 Communicable (infectious) diseases

Question 32 · continued

0 3 . 7 Treatments are available for some cardiovascular diseases.

Draw **one** line from each cardiovascular disease to a treatment for the disease.

[3 marks]

Cardiovascular disease	Treatment
A blocked coronary artery	Antibiotics
Heart failure	Heart transplant
High blood cholesterol	Statins
	Stent

0 3 . 8 Why is coronary heart disease described as a 'non-communicable disease'?

[1 mark]

_____

_____

16

4.3.1.1 Communicable (infectious) diseases

Question 33

June 2025 | 8461/1F | Original Q6

0 6 Measles is an infectious disease caused by a pathogen.

0 6 . 1 What type of pathogen causes measles?

[1 mark]

0 6 . 2 Give **one** way measles is spread from one person to another person.

[1 mark]

0 6 . 3 One symptom of measles is pain.

In adults, aspirin can be used to treat the pain.

Which plant did aspirin originate from?

[1 mark]

0 6 . 4 Give **one** other symptom of measles.

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

[1 mark]

4.3.1.1 Communicable (infectious) diseases

Question 33 · continued

The spread of measles can be reduced by vaccination.

0 6 . 5 Explain why vaccinating large numbers of children helps to reduce the spread of the measles pathogen in the population.

[2 marks]

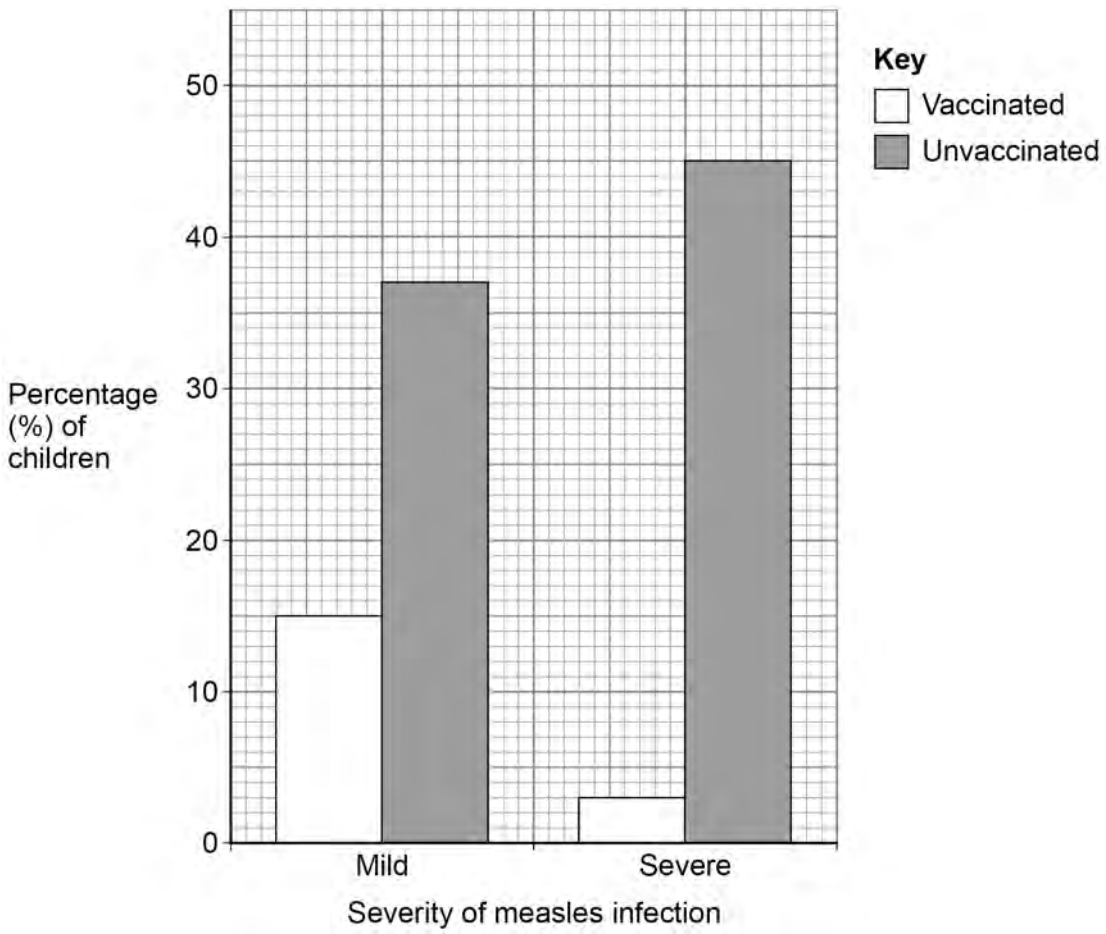
Question 6 continues on the next page

4.3.1.1 Communicable (infectious) diseases

Question 33 · continued

Figure 9 shows information about the severity of measles infection in vaccinated and unvaccinated children.

Figure 9



0 6 . 6 There were 240 children in the survey.

Calculate how many **unvaccinated** children had a severe measles infection.

Use **Figure 9**.

[3 marks]

Number of unvaccinated children = _____

4.3.1.1 Communicable (infectious) diseases

Question 33 · continued

0 6 . 7 It is recommended that all children are given a measles vaccination.

Give evidence from **Figure 9** to support the recommendation.

Include data from **Figure 9** in your answer.

[2 marks]

11

Turn over for the next question