

# Viral, Bacterial, Fungal and Protist Diseases

**Q:1** Influenza is caused by a virus.

**(a)** How do viruses cause illness?

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**(1 mark)**

**(b)** A British company making a reality television show in the Peruvian Amazon has been accused of starting an influenza epidemic. This epidemic allegedly killed four members of a remote Indian tribe and left others seriously ill.

The members of the television crew did not show symptoms of influenza, but members of the Indian tribe died from the disease.

Suggest an explanation for this.

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**(3 marks)**

**Q:2** Viruses and bacteria cause diseases in humans.

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

Organisms that cause disease are called

algae.
pathogens.
vaccines.

**(1 mark)**

**(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.

**(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)**

**(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.

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**(1 mark)**

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

<b>Unfortunately, antibiotics will NOT get rid of your flu.</b>
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(c) (i) Why will antibiotics not get rid of flu?

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(1 mark)

(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?

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(1 mark)

(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
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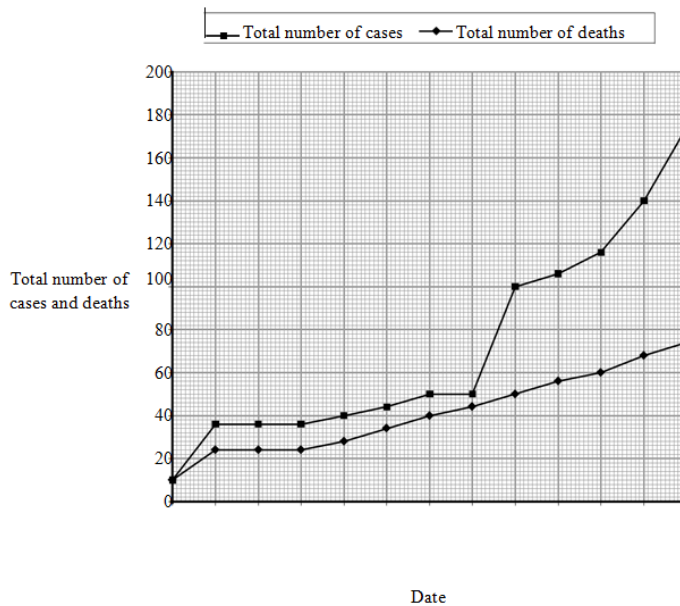
Overuse of antibiotics might speed up the development

of \_\_\_\_\_ strains of \_\_\_\_\_

(2 marks)

**Q:3** Scientists began to keep records of cases of H5N1 bird flu in humans in January 2004.

The graph shows the total number of cases of bird flu in humans and the total number of deaths up to January 2006.



**(a)(i)** How many people had died from bird flu up to 01/07/05?

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**(1 mark)**

**(ii)** Describe, as fully as you can, how the number of cases of bird flu in humans changed between 01/07/04 and 01/01/06.

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**(2 marks)**

**(b)** At present, humans can only catch bird flu from contact with infected birds. The bird flu virus may mutate into a form that can be passed from one human to another.

Explain why millions of people may die if the bird flu virus mutates in this way.

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**(2 marks)**

**Q:4** Pathogenic bacteria and viruses may make us feel ill if they enter our bodies.

**(a)** Why do bacteria and viruses make us feel ill?

Bacteria\_\_\_\_\_

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Viruses\_\_\_\_\_

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**(2 marks)**

**(b)** Most drugs that kill bacteria cannot be used to treat viral infections. Explain why.

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**(2 marks)**

**(c)** Antibiotic-resistant strains of bacteria are causing problems in most hospitals.

Explain, as fully as you can, why there has been a large increase in the number of antibiotic-resistant strains of bacteria.

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**(4 marks)**

**Q:5** Influenza is a disease caused by a virus.

(a) Explain why it is difficult to treat diseases caused by viruses.

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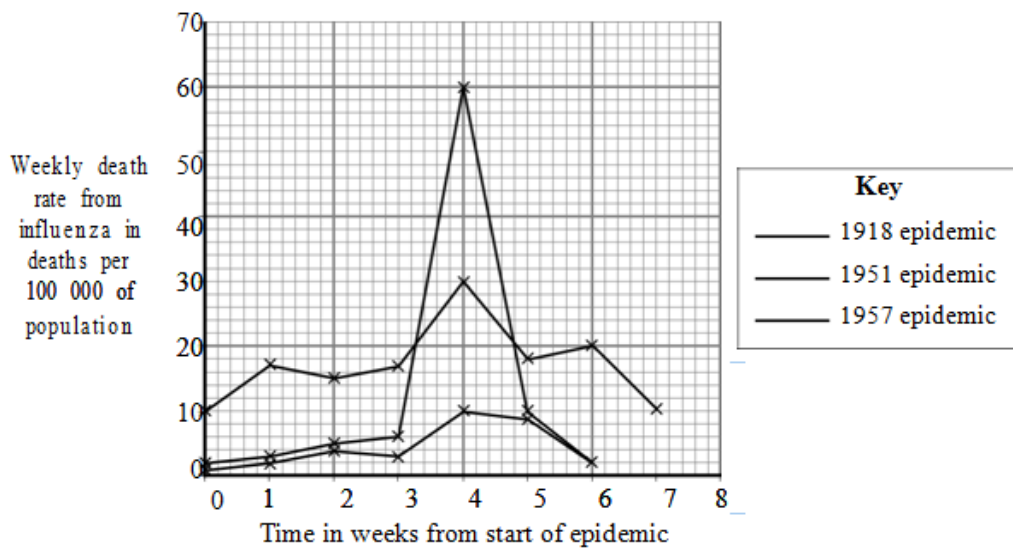
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(2 marks)

(b) In some years there are influenza epidemics.

The graph shows the death rate in Liverpool during three influenza epidemics.



(b)(i) The population of Liverpool in 1951 was approximately 700 000.

Calculate the approximate number of deaths from influenza in week 4 of the 1951 epidemic.

Show clearly how you work out your answer.

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Number of deaths \_\_\_\_\_

(2 marks)

**(b)(ii)** In most years, the number of deaths from influenza in Liverpool is very low.

Explain, in terms of the influenza virus and the body's immune system, why there were large numbers of deaths in years such as 1918 and 1951.

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**(3 marks)**

**Q:6** Influenza is an infectious disease. The influenza virus often mutates.

This has made the World Health Organisation worried about another influenza pandemic.

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

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**(1 mark)**

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

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**TOTAL MARKS=35**

**(3 marks)**