

Name of the Student: _____

Max. Marks : 24 Marks

Time : 24 Minutes

Q1.

Many strains of bacteria have developed resistance to antibiotics.

The table shows the number of people infected with a resistant strain of one species of bacterium in the UK.

Year	2004	2005	2006	2007	2008
Number of people infected with the resistant strain	3499	3553	3767	3809	4131

- (a) Calculate the percentage increase in the number of people infected with the resistant strain between 2004 and 2008.

Show clearly how you work out your answer.

Percentage increase = _____

(2)

- (b) Explain, in terms of natural selection, why the number of people infected with the resistant strain of the bacterium is increasing.

(3)

(Total 5 marks)

Q2.

Influenza is caused by a virus.

(a) How do viruses cause illness?

(1)

(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.

(3)

(Total 4 marks)

Q3.

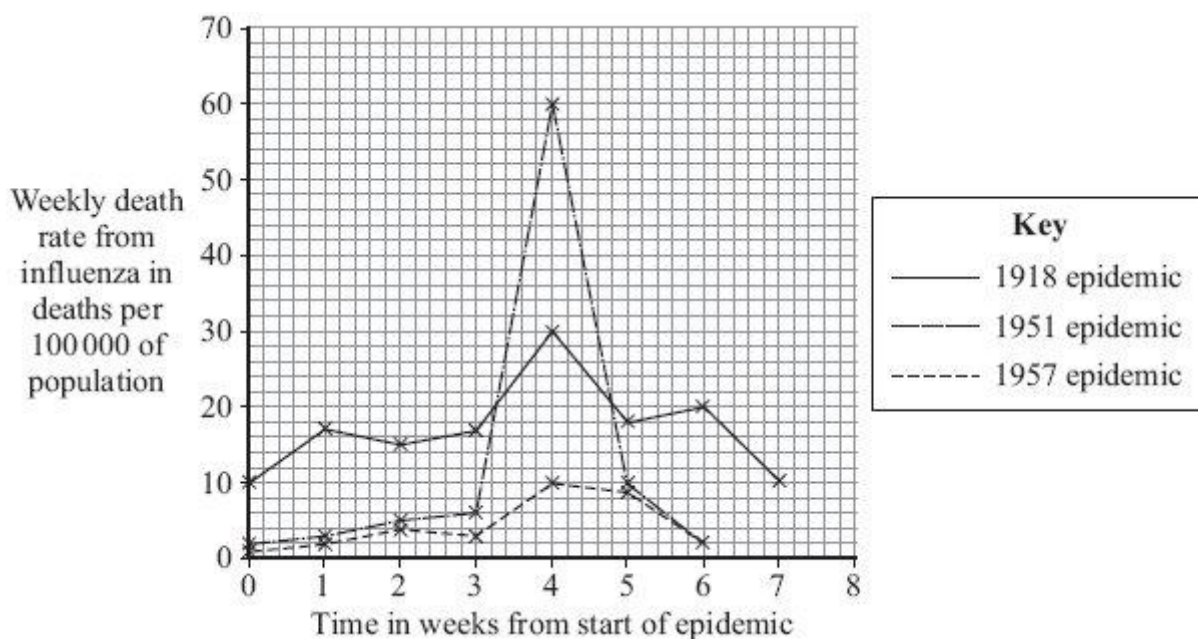
Influenza is a disease caused by a virus.

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

(2)

- (b) In some years there are influenza epidemics.

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



- (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.

Number of deaths _____

(2)

- (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.

(3)
(Total 7 marks)

Q4.

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 _____

Viruses _____

(2)

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

Explain why.

(2)

- (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.

(4)

(Total 8 marks)