Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Q1.

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

(a) Complete the sentences about vaccination.

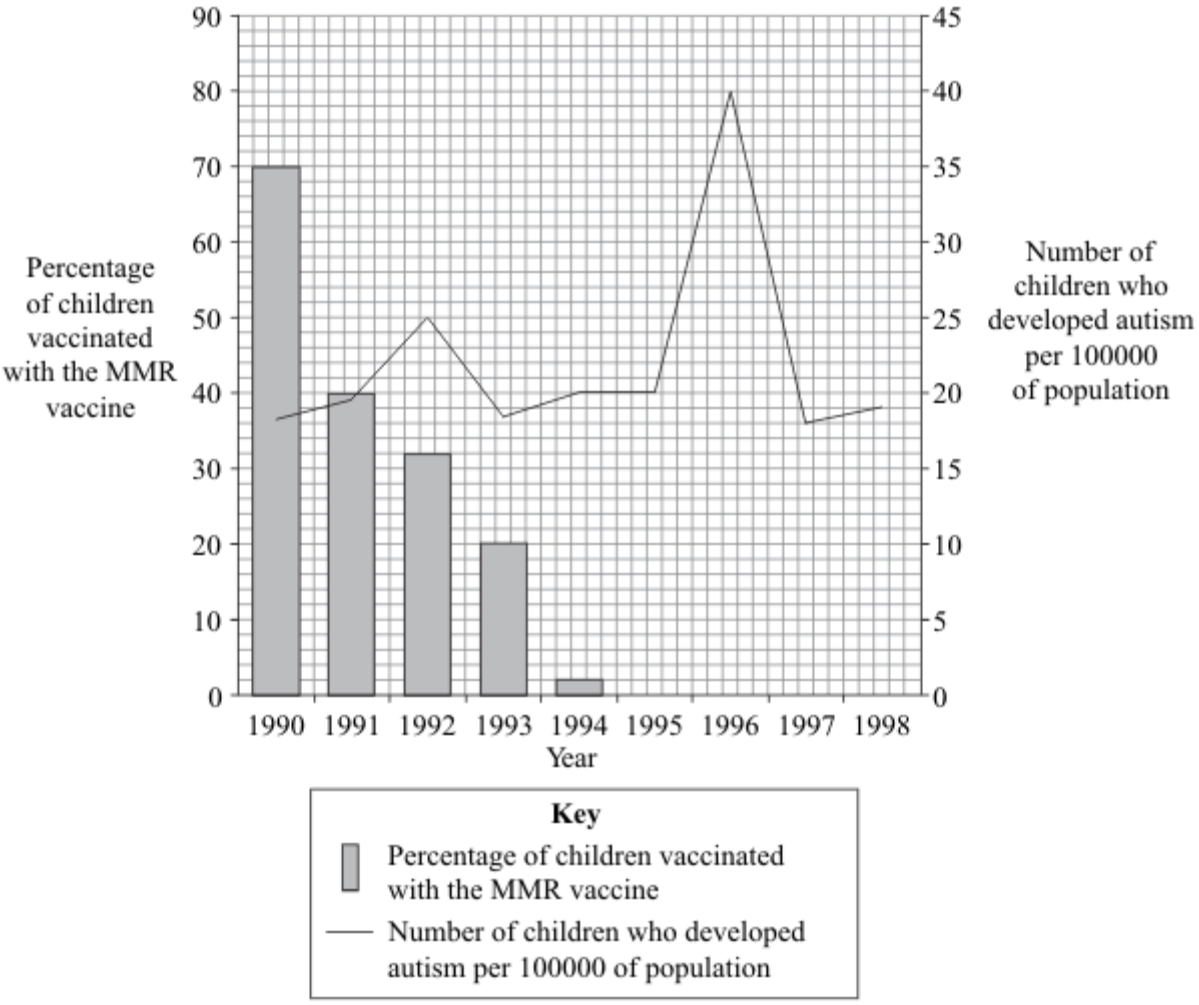
Vaccines stimulate white blood cells to produce _____ .

This makes children _____ to the pathogen.

(2)

(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.



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

_____

_____

_____

_____

_____

(2)

(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)

(Total 6 marks)

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Q2.

Controlling infections in hospitals has become much more difficult in recent years.

(a) Explain why MRSA is causing problems in many hospitals.

_____

_____

_____

_____

(2)

(b) The pioneer in methods of treating infections in hospitals was Ignaz Semmelweiss. He observed that women whose babies were delivered by doctors in hospital had a death rate of 18% from infections caught in the hospital. Women whose babies were delivered by midwives in the hospital had a death rate of 2%. He observed that doctors often came straight from examining dead bodies to the delivery ward.

(i) In a controlled experiment, Semmelweiss made doctors wash their hands in chloride of lime solution before delivering the babies. The death rate fell to about 2% – down to the same level as the death rate in mothers whose babies were delivered by midwives.

Explain why the death rate fell.

_____

_____

(1)

(ii) Explain how Semmelweiss's results could be used to reduce the spread of MRSA in a modern hospital.

_____

_____

_____

_____

(2)

(Total 5 marks)

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Q3.

(a) (i) Some diseases can be tackled by using antibiotics and vaccination.
Explain fully why antibiotics cannot be used to cure viral diseases.

_____

_____

_____

_____

(2)

(ii) A recent study found that babies in 90 % of hospitals are infected with the MRSA bacterium.

Explain how the MRSA bacterium has developed resistance to antibiotics.

_____

_____

_____

_____

(2)

(b) A person can be immunised against a disease by injecting them with an inactive form of a pathogen.

Explain how this makes the person immune to the disease.

_____

_____

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_____

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_____

(3)

(Total 7 marks)

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