

Communicable Diseases

Total mark – 14

Question: 1

Viruses cause disease.

- (a) What name is given to microorganisms that cause disease?

Tick (✓) **one** box.

Pathogens

☐

Predators

☐

Prokaryotes

☐

(1)

- (b) How do viruses cause the symptoms of disease?

Tick (✓) **one** box.

Viruses engulf white blood cells, destroying them.

☐

Viruses produce antibodies that damage tissues.

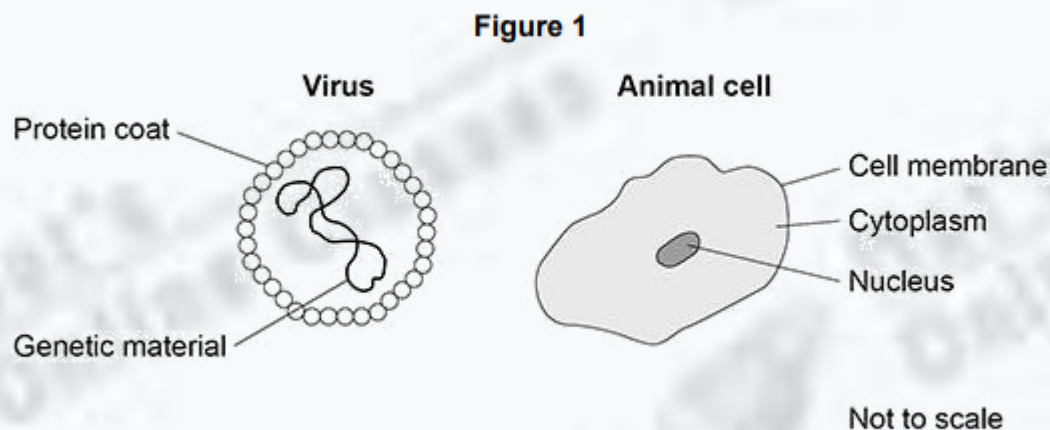
☐

Viruses reproduce inside cells, damaging them.

☐

(1)

Figure 1 shows a virus and an animal cell.



(c) Suggest **one** reason why viruses are **not** classed as cells.

(1)

A vaccine can protect humans from a viral disease.

(d) What does the vaccine contain?

Tick (✓) **one** box.

A toxic form of a virus

☐

A weakened form of a virus

☒

An active form of a virus

☐

(1)

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

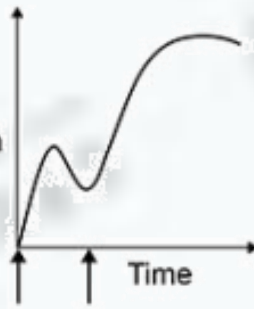
(e) Which graph shows how the concentration of antibodies in a person's blood changes after the first and second vaccinations?

Tick (✓) **one** box.

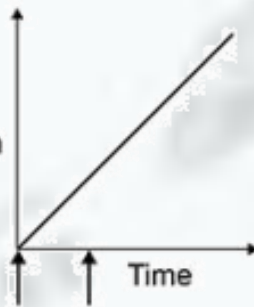
Key

↑ Vaccination given

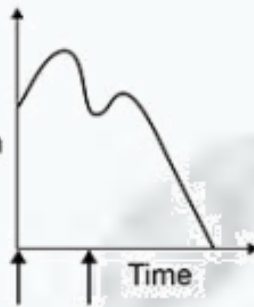
Antibody concentration



Antibody concentration



Antibody concentration



(1)

Tobacco mosaic virus (TMV) causes disease in plants.

TMV affects the rate of photosynthesis in plants.

(f) Which part of a plant shows discolouration caused by TMV?

Tick (✓) **one** box.

Flower

☐

Leaf

☐

Root

☐

(1)

The table below shows the rate of photosynthesis in four different tobacco plants.

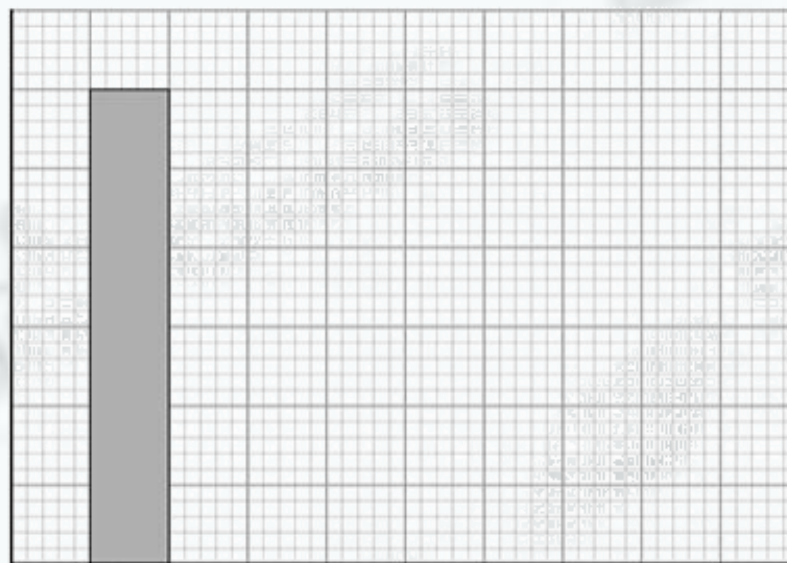
Tobacco plant	Level of TMV infection in plant	Rate of photosynthesis in arbitrary units
A	None	15
B	Mild	13
C	Medium	7
D	High	3

(g) Complete **Figure 2**.

You should:

- label the y-axis
- add the correct scale to the y-axis
- plot the data from the table above
- label each bar.

Figure 2



None
(A)

Level of TMV infection

(5)

(h) What conclusion can be made from the data in the table above?

(1)

(i) Explain why a high level of TMV infection reduces growth in a plant.

(2)