1   Read the following passage carefully then answer the questions that follow.

> *Tuberculosis (TB) is a dangerous disease that is caused by a bacterium called Mycobacterium Tuberculosis. When a person with TB coughs and sneezes, the bacteria get into the air and then other people may breathe them in.*

1 (a) (i) Which part of the body is the first to be infected if a person breathes in the TB bacteria?

[1 mark]

Lungs or bronchioles or bronchus/bronchi [1]

1 (a) (ii) How do the TB bacteria cause the disease after they have entered the body?

[2 marks]

(They) produce toxins/poisons [1]

that damage body cells or body tissue. [1]

> This is a simple but often forgotten point about what bacteria actually do in the body.
>
> Remember, viruses damage cells by splitting them.

1 (a) (iii) Name one other type or group of microorganism that can cause disease.

[1 mark]

Virus or fungus [1]

1 (b)   Once the TB bacteria have entered the body, how does the body defend itself?

Explain as fully as possible.

[5 marks]

Some white blood cells ingest/digest/engulf bacteria (not microbes). [1]

Some produce antibodies [1]

which destroy/kill bacteria/viruses. [1]

Some produce antitoxins [1]

which counteract/destroy poisons released by bacteria. [1]

> There is always a lot of confusion between the terms '**antibody**', '**antibiotic**' and '**antigen**' as reported by examiners every year. It's very important that you know the difference.

2   The MMR vaccine was introduced in 1988. Other than measles and mumps, which other disease does the MMR vaccine protect against?

[1 mark]

Rubella [1]   Rubella is also known as German measles.

To immunise someone against measles, a vaccine is injected into the body.

Describe how a vaccine can stop a person catching measles in the future.

[3 marks]

Dead/inactive microbe injected or given to a person [1]

White blood cells produce antibodies [1]

against the antigens (on the dead/inactive microbe) [1]

Memory cells [1]

When/if live microbe infects a person, antibodies quickly/rapidly produced [1]

[Total 13 marks]

END