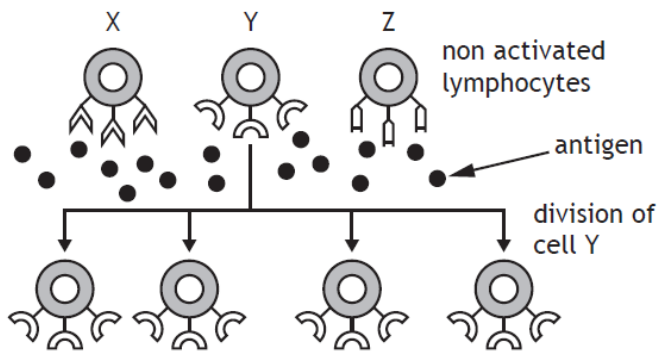




SPECIFIC CELLULAR DEFENCES HOMEWORK

The diagram below represents clonal selection in lymphocytes.



What stimulates the division of cell Y?

- A The presence of lymphocytes X and Z
- B The presence of an antigen in the blood
- C The binding of antibodies to receptors on the cell membrane
- D The binding of antigens to receptors on the cell membrane

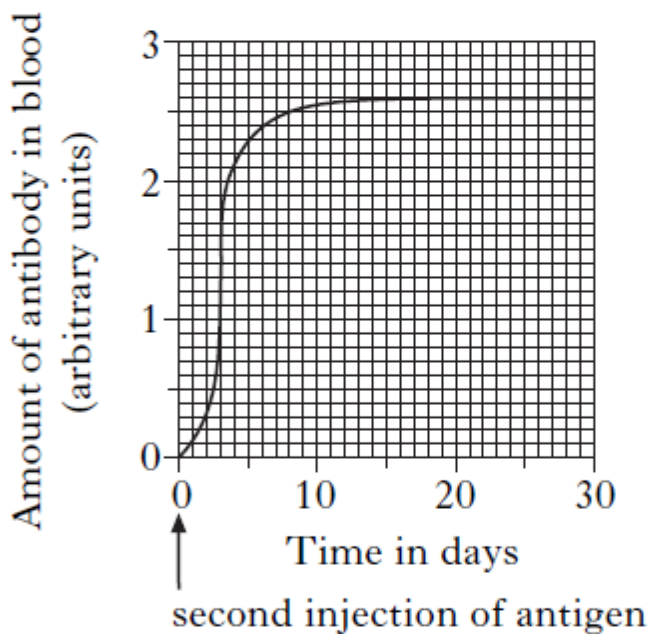
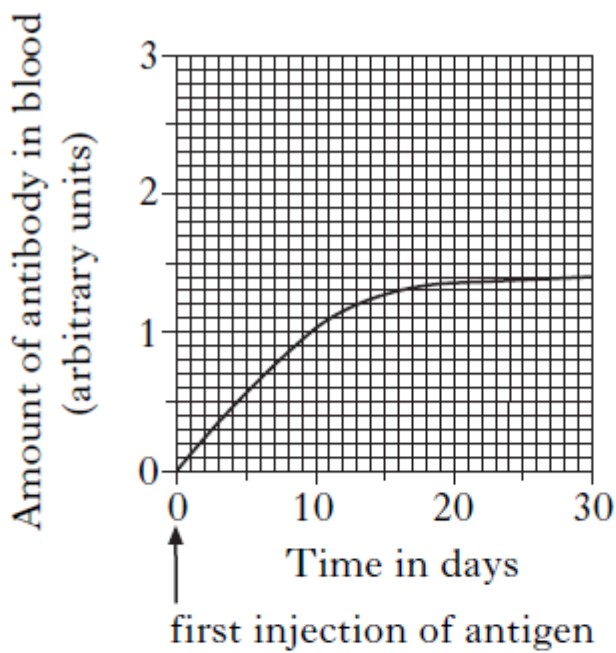
Which of the following is an immune response?

- A T-lymphocytes secreting antigens
- B T-lymphocytes carrying out phagocytosis
- C B-lymphocytes combining with foreign antigens
- D B-lymphocytes producing antibodies

Lymphocytes act in the defence of the body by

- A ingesting toxins
- B ingesting pathogens
- C producing lysosomes
- D producing antibodies.

The graphs below show the effect of two injections of an antigen on the formation of an antibody.



How many days after the second injection does the amount of antibody in the blood reach the maximum achieved after the first injection?

- A 3 days
- B 6 days
- C 20 days
- D 30 days

- (a) The table contains information about cells of the immune system.
Complete the table to identify the cell types and their functions.

<i>Cell type</i>	<i>Function</i>
	Releases cytokines
B lymphocyte	
	Induces apoptosis

2

- (b) (i) Explain what is meant by the term active immunity.

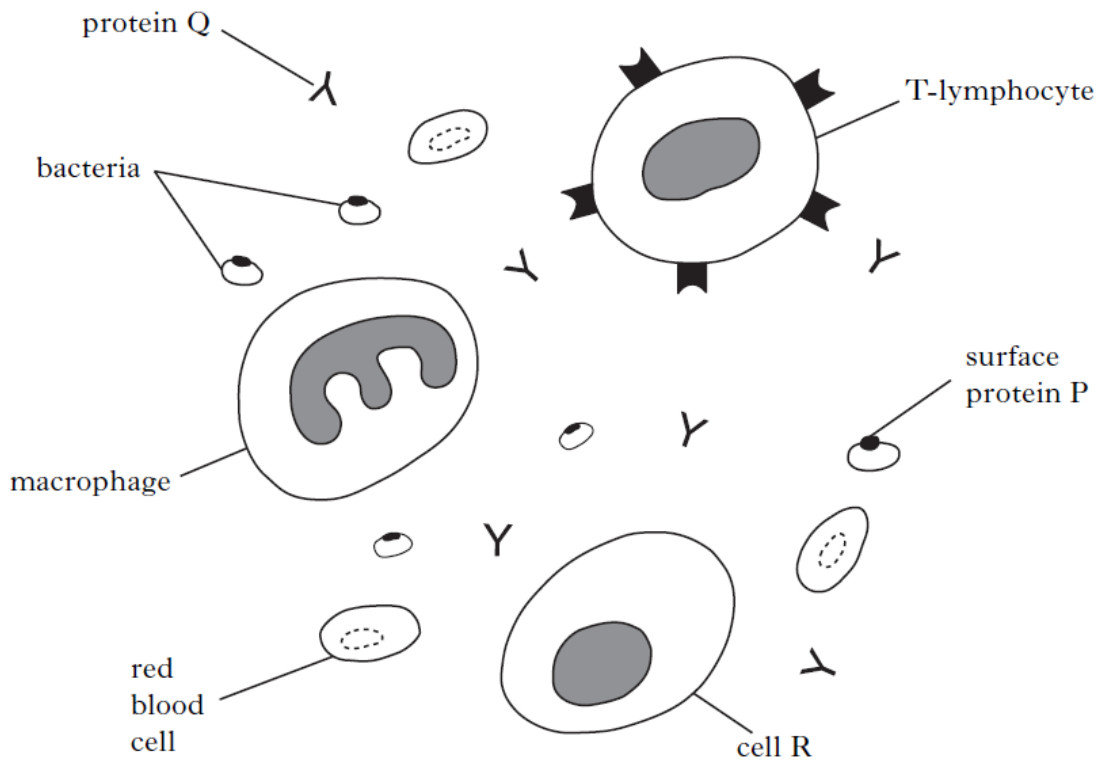
1

- (ii) Describe the role of memory cells in providing long term immunity to a disease.

1

The diagram below shows blood from a person who has been infected by bacteria. These bacteria have triggered an immune response involving proteins P and Q.

The diagram is not drawn to scale.



(a) (i) Identify proteins P and Q.

P _____ Q _____ 1

(ii) Cell R produced protein Q.
Name this type of cell.

_____ 1

(iii) Describe the role of the following cells in combating infection.

(A) T-lymphocyte _____

_____ 1

(B) Macrophage _____

_____ 1

(continued)

- (b) Complete the following sentences by underlining one option from each pair of options shown in **bold**.
- (i) Immunity gained after contracting a bacterial infection is an example of **active** / **passive** immunity that is **naturally** / **artificially** acquired. 1
- (ii) Immunity gained from the injection of a tetanus vaccine is an example of **active** / **passive** immunity that is **naturally** / **artificially** acquired. 1
- (c) What happens during an autoimmune response?

1

Essay

Give an account of immunity under the following headings:

- i) B lymphocytes and T lymphocytes (7)