

Immunity: practice questions

8 questions · 24 marks · mark scheme at the back

For Cambridge IGCSE Biology 0610 (and 0970, which has the same content). **Supplement** is Extended content, only examined on Papers 2 and 4.

Name

Total / 24

1 **Supplement** [1 mark]

Antibodies are:

- A. ☐ lipids with a shape complementary to an antigen
- B. ☐ proteins with a shape complementary to an antigen
- C. ☐ carbohydrates with a shape identical to an antigen
- D. ☐ white blood cells that engulf pathogens

2 **Supplement** [4 marks]

Describe how antibodies help to destroy a pathogen.

3 **Supplement** [3 marks]

Define active immunity and state two ways in which it can be gained.

4 **Supplement** [3 marks]

Outline the process of vaccination.

5

Supplement

[1 mark]

What gives long-term immunity after vaccination?

- A. ☐ Antibodies from the mother
- B. ☐ Memory cells
- C. ☐ Stomach acid
- D. ☐ Mucus

6

Supplement

[3 marks]

Explain how vaccinating a large part of a population helps control the spread of a disease.

7

Supplement

[5 marks]

A baby is breast-fed. Explain how breast-feeding helps to protect the baby against disease, and why this protection does not last.

8

Supplement

[4 marks]

Compare active immunity with passive immunity.

Mark scheme

One mark for each point unless a maximum is given. Words in brackets are not needed for the mark.

1. [1] Supplement

B B (1)

2. [4] Supplement

- pathogen has antigens / antigens have specific shapes (1)
- antibody has a complementary shape / fits the antigen (1)
- antibody binds to the antigen (1)
- pathogen destroyed directly (1)
- or pathogen marked for destruction by phagocytes (1)
- reject antibodies engulf / eat pathogens; reject antibody described as a cell
- Max 4

3. [3] Supplement

- defence against a pathogen by antibody production in the body (1)
- after an infection by a pathogen (1)
- by vaccination (1)

4. [3] Supplement

- weakened pathogens or their antigens are put into the body (1)
- antigens stimulate lymphocytes to produce antibodies / an immune response (1)
- memory cells are produced that give long-term immunity (1)

5. [1] Supplement

B B (1)

6. [3] Supplement

- fewer people can become infected / fewer susceptible hosts (1)
- pathogen is passed on less often / harder to find a new host (1)
- so people who are not vaccinated are less likely to be infected (1)

7. [5] Supplement

- breast milk contains antibodies from the mother (1)
- antibodies protect the baby against pathogens (1)
- baby's immune system is not fully developed / baby has not made its own antibodies yet (1)
- this is passive immunity (1)
- memory cells are not produced (1)
- so protection is short-term / ends when antibodies are broken down (1)
- Max 5

8. [4] Supplement

- active: antibodies made by the person's own lymphocytes; passive: from another individual (1)
- active: gained by infection or vaccination; passive: via placenta or breast milk (1)
- active: memory cells produced; passive: not produced (1)
- active: long-term; passive: short-term (1)