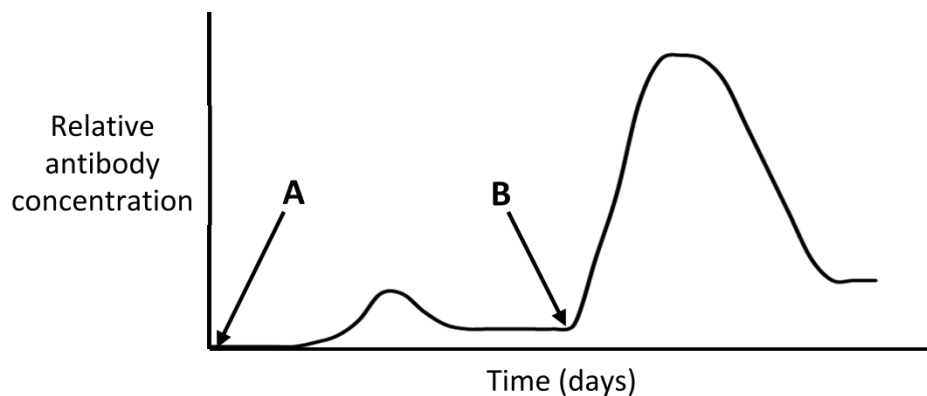


# Human Defence System Test

## Question 1

- (c) SARS-CoV-2 is a novel coronavirus which led to a global COVID-19 pandemic in 2020. A race to produce a vaccine began. The vaccine causes an immune response where antibodies are produced.
- (i) Mucous membrane linings produce mucus which can help as a physical barrier against the entry of viruses.  
Name **two** places in the body where mucus membrane linings are found.
  - (ii) Give the precise location in the body where lymphocytes are produced.
  - (iii) Identify the specific type of lymphocyte that produces antibodies.
  - (iv) Identify **one** type of white blood cell, other than lymphocytes, that is involved in an immune response.
  - (v) The graph below shows the antibody production after a person receives a vaccine (**A**) and after the same person becomes infected with the virus (**B**).



1. Using the information from the graph, compare the antibody response after receiving the vaccine at **A** with the antibody response after becoming infected with the virus at **B**.
  2. Suggest a reason for your answer at part 1. above.
- (vi) Identify the part of the virus that is recognised by antibodies.
  - (vii) Explain why antibiotics are not prescribed to cure COVID-19.

## Question 2

- (b) (i) An outbreak of measles occurred in Ireland during the summer of 2016.  
Name a group of people who would be most at risk if exposed to such an outbreak.
- (ii) What is a vaccine **and** how does it result in immunity?
  - (iii) List any **three** types of T lymphocyte active in the human immune response.
  - (iv) Describe the role of **each** of the T cells referred to in part (iii) above.

### Question 3

- (a) (i) Outline how any **one** named feature of the human general defence system works.
- (ii) Name **two** organs in the human body that are specific to the immune system.
- (iii) Distinguish clearly between an antigen and an antibody.
- (iv) T cells are a type of lymphocyte, with different sub-types having different roles in our immune system.
  1. Describe the specific roles of both killer T cells **and** helper T cells in an immune response.
  2. Name the T cells that stop the immune response.