

AS Level Biology A
H020/02 Depth in biology

Question Set 4

1. Lymphocytes form an important part of the specific immune system in humans. They can be classified into B lymphocytes and T lymphocytes.

(a) For each of the statements in the table below, use **ticks or crosses** to identify whether the statement belongs to B lymphocytes, or to T lymphocytes, or to both B and T lymphocytes.

The first one has been done for you.

Statement	B lymphocytes	T lymphocytes
Matured in bone marrow	✓	✗
Form part of immune response		
Differentiate into memory cells		
Produce chemicals that can cause lysis of infected cells		
Form plasma cell clones		

[4]

(b) Fig. 1 shows the concentration of antibodies in a patient's bloodstream following an influenza(flu) vaccination, and then a subsequent infection with the influenza virus.

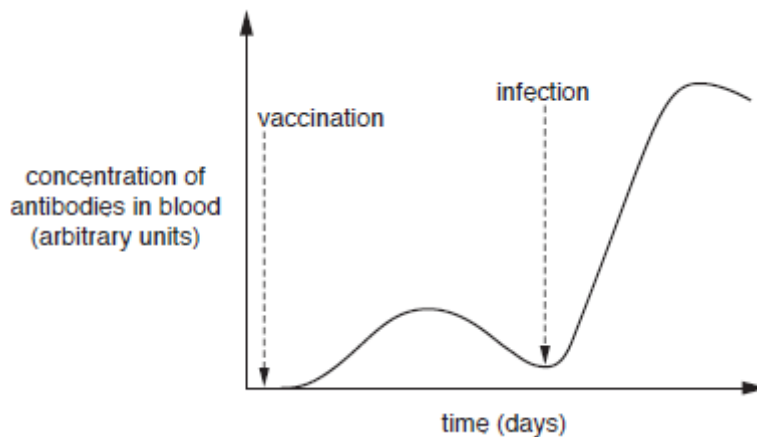


Fig. 1

Describe where the primary and secondary immune responses are taking place on Fig. 1 and explain the differences between the two processes.

[3]

(c)* In West Africa during 2015 there was a serious outbreak of the viral disease Ebola which spread by contact with infected bodily fluids.

- At the start of the outbreak there was a severe lack of trained health workers in the affected areas and much of the nursing was carried out in the family home or at local clinics.
- Many residents lived in close proximity to one another and sanitation was often of a poor standard.
- In times of illness it was common for people to travel to stay with close relatives, often in nearby villages or towns.
- As the outbreak spread, some residents left their villages to flee from the disease.
- Local mourning and burial practices involved gathering at the family house to pay respects to the deceased. Prior to burial the deceased was usually bathed by close family members.

A number of common factors affect the spread of communicable diseases in humans and some of them are relevant to the spread of Ebola. From the information above, discuss these factors and suggest what actions could have been put in place to address them.

[6]

Total Marks for Question Set 4: 13

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