Q 2015 14 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.

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| **14.** (a) | 1. Feature named Mechanism described
2. Thymus / spleen / lymph nodes / tonsils
3. *Antigen:* (foreign particle that) causes an antibody response

**OR***Antibody:* (protein) produced in response to an antigen (or to infection)1. 1. *Killer T cells*: recognise infected cell (or cancer or antigen)

**or** produce perforin **or** perforates (cell) membrane **or** kill the infected cell**or** kill cancer cell*Helper T cells*: produce interferon **or** recognise antigens **or**stimulate B-cell (or antibody production) **or**activate Killer T cells2. \*Suppressor (T cells) | **3** |
| **3** |
| **2(3)** |
| **3** |
| **6** |
| **6** |
| **3** |

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| (c) | (i)(ii)(iii)(iv)(v) | What is meant by the term immunity?Outline briefly the role of B lymphocytes in the human immune system. Distinguish between active and passive immunity.“Vaccination gives rise to active immunity”. Explain this statement.In certain situations a person is given a specific antibody rather than being vaccinated.1. Is this an example of active or passive immunity?
2. Under what circumstances might an antibody, rather than a vaccination, be given?
3. Comment on the duration of immunity that follows the administration of an antibody.
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| **(i)** | resistance to infection **or** to antigens [*allow* disease] | **3** |
| **(ii)** | recognition / produce antibodies / specific to antigens or in response to antigens [*allow* memory cells] | **2(3)** |
| **(iii)** | *active immunity:* body produces antibodies | **3** |
|  | *passive immunity:* antibodies introduced to body | **3** |
| **(iv)** | vaccination introduces antigen or explained / causes antibody production | **2(3)** |
| **(v)** | 1. passive\*
2. infection may already have occurred **or** possibility of dangerous
 | **3** |
|  | infection **or** example **or** no vaccine available **or** vaccine too |  |
|  | expensive | **3** |
|  | 3. short | **3** |

Q 2006 6 c

 Distinguish between the following terms: Antigen and antibody

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(e) antigen: substance on cell membrane or surface of virus or bacteria or causes antibody production or foreign substance

antibody: produced in response to antigen or destroys antigen or defence protein or produced by lymphocytes