Immune System Review
Key

Complete the following paragraph

The skin is the body s first line of defence. It provides a physical barrier against the entry of pathogens. Similarly, the mucus that lines the respiratory and digestive tracts traps pathogens. The mucus-secreting cells and the tear ducts produce the enzyme lysozyme which destroys bacteria by breaking down their cell walls before they can enter the bloodstream.

Before microorganisms can enter the lungs they may be trapped, along with debris, by the cilia in the lungs. If pathogens reach the stomach they are often destroyed by enzymes in the gastric juice.

Should pathogens enter the body tissues the immune system goes to work. Macrophages engulf and destroy pathogens. Lymphocytes called B cells produce antibodies which bind to antigens on the surface of pathogens. Lymphocytes called T cells pass through the thymus gland early in a person s life. Helper T cells signal the presence of an antigen. Killer T cells are primarily responsible for the destruction of diseased cells.

Two types of cells, lymphocytes and macrophages, are important in defending the body against diseases. Complete the chart below with the correct information about these two kinds of cells

	Lymphocytes	Marcrophages
Where produced	thymus and bone marrow	bone marrow
Where stored	spleen, lymph nodes, tonsils, adenoids	blood
Reaction to foreign invaders	helper t cells signal presence of an antigen killer t cells destroy diseased cells B cells make antibodies which bind to antigens and prevent them from infecting healthy cells	engulf foreign invaders signal other immune cells to attack

Active and passive immunity

The role of B cells in the immune system is essential. Study the diagram below and then complete the paragraph

B cells make (a) antibodies in response to the presence of (b) antigens. Each B cell produces its own specific (a). A B cell has some of its (a) in its cell membrane to

advertise the kind of (a) it makes.

When a pathogen encounters a B cell that has an (a) on its surface that matches the antigen s shape, the B cell begins to multiply rapidly by mitosis. This produces a clone with millions of identical copies of the original B cell. These produce large numbers of (a) which are carried in the blood plasma and tissue fluid.

If the same kind of (b) gets into the body again, memory cells provide active immunity. Some (a) are passed toa fetus through the placenta or an infant through breast milk. The infant is given passive immunity to some diseases in this way.