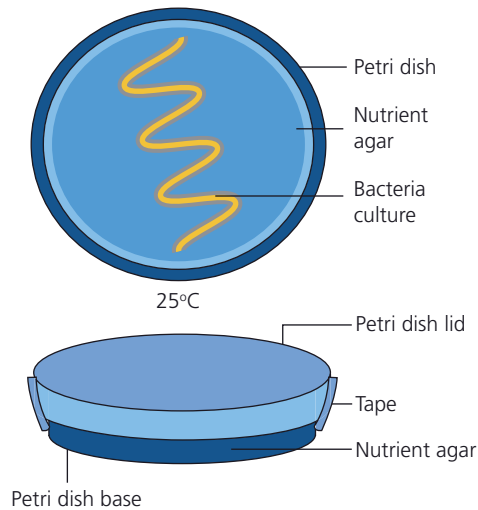


B1.8 Microorganisms

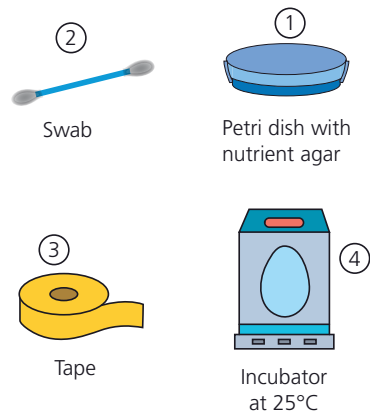
	Question	Answer
1	Define <i>microorganism</i> .	An organism that is very small and requires a microscope to view it
2	Give an example of a microorganism.	Bacteria, fungi, viruses
3	Give one example of how microorganisms can be harmful.	Bacteria that cause food poisoning; viruses that cause the common cold
4	Give one example of how microorganisms can be helpful.	Yeast is a fungus that is used to make bread and beer
5	Give four factors that are required for optimal growth of microorganisms.	Availability of nutrients; optimum temperature; availability of oxygen; optimum pH
6	What is meant by <i>growth of microorganisms</i> ?	When microorganisms grow in number
7	Why do microorganisms require nutrients?	To grow in number
8	State what happens to microorganism growth when temperature is increased.	It increases
9	State what happens to microorganism growth when oxygen is available.	It increases
10	State what happens to microorganism growth when pH is optimum.	It increases
11	Why do we use nutrient agar when growing microorganisms?	It is a solid structure that provides support and nutrients for microorganisms to grow
12	In terms of growth of microorganisms, define <i>incubation</i> .	Growing microorganisms at a certain temperature
13	When growing microorganisms, why must we incubate them?	To allow them to grow at a constant temperature
14	In terms of growing microorganisms, define <i>sterilised</i> .	When all microorganisms on an object have been killed
15	Define <i>pathogen</i> .	A microorganism that causes disease
16	Name the two types of defences against infection.	Physical and chemical
17	State the body's physical defences.	Skin, nose hairs, mucus
18	State the body's chemical defences.	Stomach acid, tears, saliva
19	What is the role of skin in defending against infection?	Acts as a physical barrier against pathogens

	Question	Answer
20	What is the role of nose hairs in defending against infection?	Act as a physical barrier against pathogens
21	How does mucus in the nose defend against infection?	Traps microorganisms and dust
22	Name the acid found in the stomach of animals.	Hydrochloric acid
23	What is the role of stomach acid in defending against infection?	Kills microorganisms in consumed food and drink
24	What is the role of the enzymes in tears and saliva in defending against infection?	Destroy bacterial cells by breaking down their cell walls
25	Define <i>antibodies</i> .	Proteins produced by white blood cells
26	Define <i>antigens</i> .	Proteins found on the surface of cells
27	State the function of antibodies in defence against infection.	They attach themselves to antigens on pathogens
28	Define <i>phagocytosis</i> .	Process by which white blood cells engulf and digest pathogens
29	Define <i>vaccine</i> .	Substances containing dead or inactive forms of a pathogen
30	How do vaccines work to protect against infection?	White blood cells produce antibodies specific to the antigens on the surface of the pathogen in the vaccine Happens slowly and only a small number of antibodies is produced Some white blood cells become memory cells When a vaccinated person is exposed to the live pathogen, memory cells produce specific antibodies more quickly, in larger quantities and that last longer in the blood Pathogens are eliminated quickly
31	Define <i>herd immunity</i> .	A population is protected from outbreaks of a disease when a high percentage of the population has been vaccinated against it

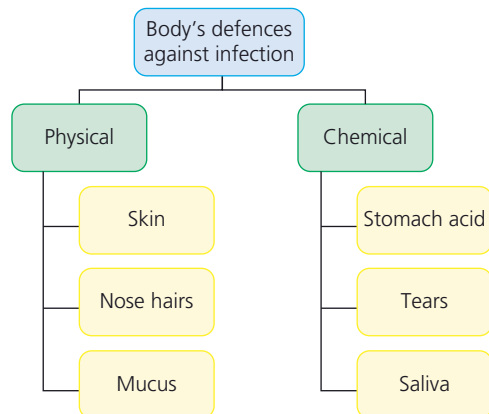
▼ Microorganism growth on nutrient agar



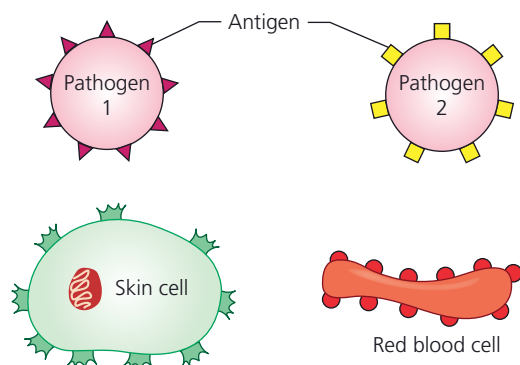
▼ Equipment needed to grow microorganisms



▼ How the body defends against infection



▼ Different cells have differently shaped antigens on their surface



▼ How white blood cells produce antibodies and engulf and digest pathogens

