Biology test MRI

4) a)

* skin acts as a barrier to pathogens
* blood clots to protect pathogens from entering the blood
* Acid in the stomach denatures and kills pathogens
* Hair works with mucus to stop pathogens entering the body through the nose
* Cilla is used to waft mucus up the trachea and can be swallowed, where the pathogen dies in the stomach

b)

* The immune system is a group of defences against pathogens in our bodies
* White blood cells produce specific antibodies and antitoxins that bind to antigens and kill pathogens. Phagocytes engulf pathogens and break them down
* Phagocytosis is when phagocytes engulf pathogens and break them down using digestive enzymes
* Antibodies are proteins produced by lymphocytes which are used to attach to pathogens and kill them
* Antitoxins are proteins produced by lymphocytes which are used to attach to toxins

10) The clear zone (the area where bacteria have been killed) can be used to investigate the effectiveness of antibiotics. The most effective antibiotic will kill the most bacteria so will have the largest clear area surrounding it.

11) The coronary artery supplies blood to the heart

Fatty material blocks the coronary artery with people with certain lifestyle which puts them at risk

This narrowing can lead to a heart attack because the heart isn’t supplied with enough oxygen for respiration. The muscle cells then doesn’t have provide enough respiration and a heart attack occurs.

12) There are many risk factors that increase your chance of getting coronary heart disease.

Having high cholesterol level increases the rate that fatty deposits build up in the coronary arteries and your chance of getting CHD. Your cholesterol levels can increase as a result of lifestyle factors such as having a high fat diet, not exercising enough, smoking and drinking too much alcohol. However, cholesterol levels can also be affected by genetic factors and certain medication.

Having higher blood pressure puts strain on your heart and can also increase your chance of CHD. Certain lifestyle factors increase blood pressure for example having high salt diet, being obese lack of exercise smoking and drinking alcohol. However, blood pressure can also be affected by genetic factors and certain medications

Kerboodle MRI

B6

3) most modern drugs are synthesised in a lab, however the starting point may be a chemical extracted from a plant, animal or microorganism

6) Monoclonal antibodies only target specific diseased cells. This is their biggest advantage as conventional treatments can also affect healthy cells. Monoclonal antibodies have been very expensive to develop, but it is hoped that one day it will be cheaper than conventional drugs

8) Antibiotics are drugs that kill bacteria. Measles is a viral infection and antibiotics are only effective against bacteria and not viruses. Measles can be vaccinated against but has not been eradicated and recently cases of measles have increased due to a fell in vaccination rates

12) Monoclonal antibodies are produced by hybridoma cells that care cloned and these bind to specific antigens. Naturally occurring antibodies are produced by white blood cells after exposure to a pathogen and they also bond to specific antigens

B7

7) both benign and malignant tumours cause health problems and grow by cell division. Only malignant tumours invade other tissues and can spread around the body

12) Chemotherapy targets rapidly dividing cells. The skin, hair follicles and lining of the digestive system are all replaced frequently by cell division; hence these are the areas of the body that are most affected during chemotherapy. There is little if any cell division in the nerves once you are fully grown