

1. To absorb oxygen and excrete carbon dioxide
2. Tiny air sacs in the lungs
3. Diffusion
4. W = valve, X = left ventricle, Y = aorta, Z= right atrium
5. The pacemaker
6. Plasma, white blood cells, red blood cells, platelets

7.

Feature	Arteries	Veins
Direction of blood flow	Away from the heart	Towards the heart
Contain valves?	No	Yes
Muscular wall	Thick	Thin
Elasticity	Very elastic	Not very elastic
Size of lumen	Narrow	Large

8. A stent is a tube that can be inserted into blood vessels or other tube like structures to keep them open to allow blood or air to flow through.

9. Oxyhaemoglobin

10. Statins are a group of medicines used to lower cholesterol levels.

Apply

Describe

Explain

1. Air is breathed into the nose and then enters the trachea. It travels down the trachea and then into one of the bronchi that enter the lungs. The bronchi then branch into bronchioles and finally the air enters the air sacs at the end of the bronchioles – the alveoli.
2. The alveoli have thin membrane for a short diffusion path – this makes diffusion fast. They also have a good blood supply which takes away the oxygen absorbed, maintaining the concentration gradient. They also have moist membranes, which means gases can dissolve in them and diffuse faster

3. The heart is known as a double pump because the left side pumps around the body and the right side pumps to the lungs.

4a) Fatty deposits in the coronary artery slows down blood flow to the heart, which means the heart does not get enough oxygen for respiration.

4b) A stent lowers the risk of a heart attack by opening up the artery and allowing the blood to flow properly again in the coronary arteries. This restores the supply of oxygen to the heart muscles which it needs for respiration

5. Statins lower the risk of a heart attack and lower the level of 'bad' cholesterol in the blood. They have also been shown to reduce the risk of other conditions such as stroke. However, they have to be taken long-term and do have side effects such as kidney damage. There is also the chance that people may forget to take them.

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Extension

- A person with anaemia does not have enough red blood cells, so cannot carry enough oxygen around the body. This means the cells do not have enough oxygen for respiration and therefore the person cannot release enough energy for their needs, leading to them feeling tired.