



Q1. Which one of the following carries deoxygenated blood towards the lungs?

(1)

- A Tricuspid valve
- B Pulmonary vein
- C Bicuspid valve
- D Pulmonary artery

Correct

Q2. Which **one** of the following transports blood into the right atrium of the heart?

(1)

- A Vena cava
- B Aorta
- C Right ventricle
- D Semi-lunar valve

Correct

Q3. Which of the following is a function of the cardiovascular system?

(1)

- A Breathing in air containing oxygen
- B Regulating body temperature
- C Protection and muscle attachment
- D Breathing out air containing carbon dioxide

Incorrect – answer was B

Q4. State two functions of the capillaries.

The capillaries allow gaseous exchange as well as linking smaller arteries with smaller veins.

(2)

Incorrect – break gaseous exchange down more – Transfer oxygen into the body's tissue and remove carbon dioxide from the body's tissues.

Q5. Define cardiac output.

Cardiac Output is the amount of blood pumped out of the left ventricle per minute.

Heart Rate x Stroke Volume = Cardiac Output

(1)

Correct

Q6. Compare the roles of arteries and veins in the cardiovascular system.

The arteries carry oxygenated blood at a high pressure away from the heart to the rest of the body, whereas veins carry deoxygenated blood back to the heart at low pressure.

(1)

Correct



**Q1.** Explain how the cardiovascular system controls temperature and how this aids performance in physical activity and sport

Blood transfers heat around the body so that we do not overheat during exercise or become too cold. When we are too hot blood vessels can dilate/swell (vasodilation); this then allows more warm blood to run near the surface of the skin, where it can be lost as air. On the other hand, when we are too cold the blood vessels contract and become narrow (vasoconstriction), reducing the flow of warm blood near the surface of the skin; overall minimising heat loss.

(2)

**2/2 correct – BOD – add in for long periods without overheating.**

**Q2.** Explain one way that the structure of arteries makes them suited to their function.

When doing exercise the blood flow increases to the working muscles in demand of more oxygen, this then means that large amounts of blood are travelling at a high intensity. To cope with this high pressure, arteries have thick, muscular and elastic walls which are adapted for carrying blood at very high pressures.

(2)

**2/2 correct**

**Q3.** Blood can be redistributed around the body to meet the demands of physical activity.

- (a) Identify two areas of the body that would experience an increase in blood flow when swimming.  
When swimming, both the legs and arms will need/experience an increase in blood flow.

(2)

**2/2 correct**

- (b) . Explain your choices

The arms will need more oxygenated blood as they are working extremely hard to pull the swimmer through the water. In addition the legs need to have an increase in blood flow as they are kicking at a high speed.

(3)

**2/3 correct – add in ‘in order to release the extra energy needed for swimming’**

**Q4.** Name the two circuits that make up the double-circulatory system and outline the function of each.

The Pulmonary circulatory system and the Systemic circulatory system are the two circuits that make up the double pump. The pulmonary circuit pumps deoxygenated blood to the lungs, which due to gaseous exchange results in oxygenated blood coming back to the heart. Yet the Systemic circuit pumps oxygenated blood away from the heart to the rest of the body (excluding the lungs) and then returns deoxygenated blood back to the heart.

(4)

**4/4 correct**

**Q5.** Describe the passage of oxygenated blood through the heart.

The oxygenated blood enters the heart through the pulmonary vein and flows straight into the left atrium. It will then move down into the left ventricle but will not flow back up as the bicuspid valve will prevent any blood doing so. From there the oxygenated blood is pumped out the heart at a high intensity through the aorta.

(5)

**4/5 correct – missed out the semi-lunar valve it pushes through to get to the aorta.**

Gold



Score 6/7

**Q1.** Assess the importance of the number of red blood cells to an endurance athlete.

Red blood cells are vitally important for an endurance athlete as they work aerobically. Since they are using their muscles for a long period of time loads of oxygen is needed to help them continuously work. The more blood cells an athlete can produce the more oxygen that can get to their muscles, helping the athlete to not get fatigued quite so quickly as well as helping them withstand exercise for long periods of time.

(3)

**3/3 correct**

**Q2.** Analyse the role of the pulmonary artery in physical activity and sport.

The pulmonary artery carries de-oxygenated blood from the heart to the lungs. Without this then athletes wouldn't be able to retrieve more oxygenated blood cells as the blood would be taken up by deoxygenated blood cells. For an athlete, the faster they can get rid of waste products the better. This is because once they have removed the waste products from the blood it can then take in more oxygen. The more sufficient this process is the more waste products can be taken out of the blood, meaning there is more space for oxygen to enter the blood stream.

(4)

**3/4 correct – just need to add that for sport oxygenated blood can be delivered to the muscles.**