



**Question 10**

Question	Answers	Extra information	Mark	AO / Spec. Ref.
<b>10</b>	<b>Level 3:</b> A detailed and coherent explanation is provided with most of the relevant content, which demonstrates a comprehensive understanding of the human circulatory system . The response makes logical links between content points.		5–6	AO1/1 4.1.1.3 4.1.3.1 4.2.2.2 4.2.2.3
	<b>Level 2:</b> The response is mostly relevant and with some logical explanation. Gives a broad understanding of the human circulatory system. The response makes some logical links between the content points.		3–4	
	<b>Level 1:</b> Simple descriptions are made of the roles of some of the following: heart function, gas exchange, named blood vessels, named blood cells. The response demonstrates limited logical linking of points.		1–2	
	No relevant content.		0	
	<b>Indicative content</b> <ul style="list-style-type: none"> <li>• dual / double circulatory system which means that it has higher blood pressure and a greater flow of blood to the tissues</li> <li>• heart made of specialised (cardiac) muscle cells which have long protein filaments that can slide past each other to shorten the cell to bring about contraction for pumping blood</li> <li>• heart pumps blood to lungs in pulmonary artery so that oxygen can diffuse into blood from air in alveoli</li> <li>• blood returns to heart via pulmonary vein where muscles pump blood to the body via aorta</li> <li>• oxygen carried by specialised cells / RBCs which contain haemoglobin to bind oxygen and have no nucleus so there is more space available to carry oxygen</li> <li>• arteries carry oxygenated blood to tissues where capillaries deliver oxygen to cells for respiration and energy release</li> <li>• thin walls allow for easy diffusion to cells</li> <li>• large surface area of capillaries to maximise exchange</li> <li>• waste products removed eg CO<sub>2</sub> diffuse from cells into the blood plasma</li> <li>• blood goes back to the heart in veins which have valves to prevent backflow</li> <li>• cardiac output can vary according to demand / is affected by adrenaline</li> </ul> <p>accept annotated diagrams</p>			
<b>Total</b>		<b>6</b>		