

Question Number	Answer	Mark
1(a)	<ol style="list-style-type: none"> 1. atria / atrium; 2. aorta ; 3. left ; 4. artery ; 5. vena cava ; 	(5)

Question Number	Answer	Mark
1 (b)	<ol style="list-style-type: none"> 1. diastole / atrial systole ; 2. the {atrioventricular / bicuspid / tricuspid} valves are open / semi-lunar valves are closed ; 	(2)

Question Number	Answer	Mark
2(a)(i)	<ol style="list-style-type: none"> 1. idea that frequent cocaine use results in {higher / an increase in / eq } levels in both blood components (compared to occasional use) ; 2. correct manipulation of figures to approximate the increase in levels of one of the blood components ; 3. frequent use increases fibrinogen beyond normal range / eq ; 4. idea that the levels of both the blood components are within the range for normal levels in occasional users ; 	max (3)

Question Number	Answer	Mark
2(a)(ii)	<p>Any one of the following ideas</p> <ol style="list-style-type: none"> 1. the levels are given as a {range / not one level / blood components within normal level range} 2. no indication of data analysis e.g. spread of data, statistics 3. no indication of number in {samples / study / eq} 4. no indication of other variables / named variable / eq ; 	max (1)

Question Number	Answer	Mark
2(b)	<p>(QWC - Spelling of technical terms (<i>shown in italics</i>) must be correct and the answer must be organised in a logical sequence)</p> <ol style="list-style-type: none"> 1. idea that <i>von Willebrand</i> factor results in <i>platelets</i> sticking to {the endothelium /each other} ; 2. reference to release of <i>thromboplastin</i> (from <i>platelets</i>) ; 3. (as a result) the blood clotting process is triggered / eq ; 4. credit one correct detail of clotting process ; 5. reference to more <i>fibrinogen</i> resulting in the clot {being larger / growing faster } ; 6. reference to <i>von Willebrand</i> factor making the <i>platelets</i> stickier ; 7. as a result of {<i>platelet</i> stickiness /platelets sticking together} the {clot grows faster / blood flow is decreased / eq} ; 8. If the blood is flowing slower then there is an increased chance of blood clotting / eq ; 	max (4)

Question Number	Answer	Mark
2(c)	<ol style="list-style-type: none"> 1. idea that a correlation is {a relationship between two factors / when one factor changes another factor changes} ; 2. fibrinogen increases with (cocaine) use / eq ; 3. heart attacks increase with cocaine use / eq ; 4. idea that increased fibrinogen levels have not been shown to result in the increase in heart disease ; 	max (2)

Question Number	Answer	Mark
3(a)(i)	Any two from: genetic, diet qualified, increasing age, male, high blood pressure, smoking, {inactivity / lack of exercise / eq} ;	(1)

Question Number	Answer	Mark
3(a)(ii)	<ol style="list-style-type: none"> 1. idea that it makes the {results / data / study} {representative / reliable} ; 2. idea that there are {many potential risk factors / large variation between individuals}; 3. idea that side effects more likely to show up ; 	max (2)

Question Number	Answer	Mark
3(b)	same treatment method as for drug S e.g. solvent used for drug S / saline / water / sugar tablet / empty capsule / eq ;	(1)

Question Number	Answer	Mark
3(c)	idea that {CVD is not an immediate disease / side effects may take time to become apparent / need to see if drug works over a long time} ;	(1)

Question Number	Answer	Mark
3(d)	<ol style="list-style-type: none"> 1. the number of {deaths / all events / eq} is {similar to / no higher than / less than} placebo group ; 2. Credit correct manipulation of figures ; 	(2)

Question Number	Answer	Mark
3(e)(i)	1. correct values selected (8.7 and 11.8) ; 2. correct subtraction ($11.8 - 8.7 = 3.1$); 3. correct multiplication by $10\,000 \div 100$; [Consequential errors apply]	(3)

Question Number	Answer	Mark
3(e)(ii)	it has been shown to reduce {CVD / stroke} / eq ;	(1)

Question Number	Correct Answer	Mark
4(a)	<ol style="list-style-type: none"> 1. {initiates / eq} heartbeat / eq ; 2. (starts) wave of excitation / depolarisation ; 3. {determines / eq} heart rate ; 	max (2)

Question Number	Correct Answer	Mark
4(b)	<ol style="list-style-type: none"> 1. {increased / eq} impulses to SAN / eq ; 2. (via) sympathetic {nervous system / eq } ; 3. stimulates more frequent depolarisation in SAN / eq ; 4. increases {heart rate / cardiac output} /eq ; 	max (2)

Question Number	Correct Answer	Mark
*4(c)	<p>(QWC - Spelling of technical terms (<i>shown in italics</i>) must be correct and the answer must be organised in a logical sequence)</p> <ol style="list-style-type: none"> 1. changes {electrical activity / <i>depolarisation</i>} of heart / eq ; 2. peak is reversed / eq ; 3. idea that peak is earlier than expected ; 4. no change in pressure in <i>pulmonary artery</i> ; 5. (because) little blood in <i>ventricles</i> ; 6. missed normal wave after E / longer gap before next wave / eq ; 7. missed (effective) <i>contraction</i> after E ; 8. early <i>depolarisation</i> leaves <i>ventricle</i> insensitive ; 9. idea that the wave of <i>depolarisation</i> is prevented ; 10. reference to <i>refractory period</i> / eq ; 	<p>max (5)</p>

Question Number	Correct Answer	Mark
4(d)	<ol style="list-style-type: none"> 1. idea that (absolutists) say drugs should not be used at any time ; 2. should not allow athletes to be pressured into using drugs ; 3. risk to health / eq ; 4. gain unfair advantage / eq ; 5. other harmful substances banned / eq ; 6. burden on care services / eq ; 7. idea that (relativists) say that drugs could be used under some circumstances ; 8. idea that they could be used for medication ; 9. drugs (in the body) can be difficult to legislate for / eq ; 	<p style="text-align: right;">max (2)</p>

Question Number	Answer	Mark															
5 (a)	<table border="1"> <thead> <tr> <th>Name of blood vessel</th> <th>Carries blood away from the heart</th> <th>Carries oxygenated blood</th> </tr> </thead> <tbody> <tr> <td>Aorta</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Vena cava</td> <td>✗</td> <td>✗</td> </tr> <tr> <td>Pulmonary artery</td> <td>✓</td> <td>✗</td> </tr> <tr> <td>Pulmonary vein</td> <td>✗</td> <td>✓</td> </tr> </tbody> </table>	Name of blood vessel	Carries blood away from the heart	Carries oxygenated blood	Aorta	✓	✓	Vena cava	✗	✗	Pulmonary artery	✓	✗	Pulmonary vein	✗	✓	(4)
	Name of blood vessel	Carries blood away from the heart	Carries oxygenated blood														
	Aorta	✓	✓														
	Vena cava	✗	✗														
	Pulmonary artery	✓	✗														
	Pulmonary vein	✗	✓														
[Any 2 correct answers for 1 mark];;;;																	

Question Number	Answer	Mark
5 (b)(i)	<ol style="list-style-type: none"> 1. (blood flows) from heart to gills ; 2. (blood flows) from gills to (rest of) body / eq ; 3. (blood flows) from body back to heart ; 4. ref to single circulation ; 	maximum (3)

Question Number	Answer	Mark
5 (b)(ii)	<ol style="list-style-type: none"> 1. blood flows {faster /at higher pressure / eq} (to the body) ; 2. blood flows {slower /at lower pressure / eq} to the lung ; 3. idea that this reduces risk of damage to lungs ; 4. correct ref to more efficient {exchange / transport} of gases / eq ; 	maximum (2)

Question Number	Answer	Mark
5 (c)	<ol style="list-style-type: none">1. correct ref to large surface area to volume ratios ;2. idea that (all) {cells / eq} are very close to the {blood / heart} ;3. idea that diffusion is fast enough for exchange of {nutrients / gases / waste} ;4. idea of low metabolism ;5. idea that movement of blood back into the heart is fast enough (to return blood back into the heart) ;	maximum (2)