

Circulatory System 2 MS

QUESTION 1

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	A artery B ventricle C atrium D vein		4
b)i	stent		1
b)ii)	keeps (artery) open so (more) blood can flow through		1 1
Total marks			7

QUESTION 2

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	(coronary) artery	allow arteriole	1
a)ii)	stent / description	accept (coronary) by-pass operation allow statins allow diets low in cholesterol allow balloon (angioplasty)	1
a)iii)	(stent) keeps artery open or (by-pass) new blood vessel / vein connecting around narrowed region; or (statins / low cholesterol diet) remove some of the cholesterol blockage or (balloon) widens / opens the blood vessel which allows (more) blood through or allows blood to go around the blockage	must relate to (b)(ii) ignore reference to capillary / vein	1 1
b)i)	F artery	accept arteriole / branch of pulmonary artery	3

	G capillary H vein	H accept venule / branch of pulmonary vein;	
b)ii)	F (Pulmonary artery) has less oxygen / more carbon dioxide / more glucose/sugar	accept F (Pulmonary artery) is 1 deoxygenated accept converse for H (Pulmonary vein) 'It' refers to F	1
Total marks			8

QUESTION 3

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	<p>The diagram consists of four boxes on the left representing blood components: 'White blood cells', 'Red blood cells', 'Platelets', and 'destroy microorganisms'. On the right, there are three boxes representing functions: 'carry glucose around the body', 'carry oxygen around the body', and 'help the blood to clot'. Arrows point from 'White blood cells' to 'carry glucose around the body', from 'Red blood cells' to 'carry oxygen around the body', and from 'Platelets' to 'help the blood to clot'. The 'destroy microorganisms' box is at the bottom and has no arrows pointing to it.</p>	one mark for each line extra line negates a mark	3
a)ii)	any one from: • carbon dioxide / CO ₂ • urea	do not allow urine ignore water ignore ions	1
b)i)	B		1
b)ii)	D		1
b)iii)	vein	accept correct named examples	1
b)iv)	any one from: keeps artery / blood vessel open or widens artery / blood vessel allows (more) blood to heart / cardiac muscle (allows) blood to flow more easily allows (more) oxygen to heart / cardiac muscle		1
c)	any two from: • bleeding	allow blood clots	2

	<ul style="list-style-type: none"> infection damaging blood vessels damaging the heart risk from anaesthetic 		
Total marks			10

QUESTION 4

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	defence against or destroy pathogens / bacteria / viruses / microorganisms	do not allow 'destroy disease' accept engulf pathogen / bacteria / viruses / microorganism accept phagocytosis accept produce antibodies / antitoxins allow immune response	1
a)ii)	they are small fragments of cells		1
b)i)	liver kidney(s)	in this order only	2
c)	any two from: <ul style="list-style-type: none"> that it doesn't cause an immune response or isn't rejected / damaged by white blood cells whether it is a long lasting material / doesn't decompose / corrode / inert if it is strong (to withstand pressure) it will open at the right pressure that it doesn't cause clotting that it doesn't leak or it prevents backflow non toxic 	ignore correct size	2
Total marks			6

QUESTION 5

QUESTION	ANSWER	EXTRA INFORMATION				MARKS							
a)i)	any two from: <ul style="list-style-type: none"> • carbon dioxide / CO₂ • urea • protein • water / H₂O • hormones / insulin 	ignore food / waste / alcohol / drugs / enzymes ignore glucose and oxygen allow two correct hormones for 2 marks allow two correct food components for 2 marks allow antibodies allow antitoxins				2							
b)i	plasma platelets					1 1							
b)ii)	(cardiac) muscle	allow muscular				1 1							
c)	<table border="1"> <thead> <tr> <th>0 marks</th> <th>Level 1 (1–2 marks)</th> <th>Level 2 (3–4 marks)</th> <th>Level 3 (5–6 marks)</th> </tr> </thead> <tbody> <tr> <td>No relevant content</td> <td> There is a description of at least one advantage of the cow tissue valve or a description of at least one disadvantage of the cow tissue valve. </td> <td> There is a description of at least one advantage of the cow tissue valve and at least one disadvantage of the cow tissue valve. </td> <td> There is a description of the advantages and disadvantages of the cow tissue valve or a description of several advantages of the cow tissue valve and at least one disadvantage. </td> </tr> </tbody> </table>				0 marks	Level 1 (1–2 marks)	Level 2 (3–4 marks)	Level 3 (5–6 marks)	No relevant content	There is a description of at least one advantage of the cow tissue valve or a description of at least one disadvantage of the cow tissue valve.	There is a description of at least one advantage of the cow tissue valve and at least one disadvantage of the cow tissue valve.	There is a description of the advantages and disadvantages of the cow tissue valve or a description of several advantages of the cow tissue valve and at least one disadvantage.	6
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	examples of the points made in the response Advantages of cow tissue valve: without value added <ul style="list-style-type: none"> • abundant supply of cows • so shorter waiting time • no need for tissue typing • quicker operation • less invasive or shorter recovery time • cheaper operation costs • less operation / anaesthetic risks 												

	<p>Disadvantages of cow tissue valve:</p> <ul style="list-style-type: none">• made from cow so possible objections on religious grounds• new procedure so could be unknown risks• risks of using a stent eg. blood clots, stent breaking or valve tearing• not proven as a long term treatment• may be rejected	
Total marks		11