

Kidney MS

QUESTION 1

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	bladder		1
a)ii)	glucose protein	extras - CANCEL	1 1
b)i)	any two from: <ul style="list-style-type: none"> • kidney functions all the time / not just 3 × 8 h sessions a week • can eat high-protein foods / high salt foods • cheaper • waste of time 	allow direct quotation of correct points from the list allow can eat anything	2
b)ii)	have to take (immunosuppressant) drugs / consequence of this eg catch infections / may suffer brain damage / possible rejection of or kidney or become ill more easily risk of brain damage (due to anaesthetic)	allow direct quotation of correct points from the list	1
c)i)	urea		1
c)ii)	4.2		1
Total marks			8

QUESTION 2

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	any three from: <input type="checkbox"/> glucose enters blood from gut /liver / glycogen <input type="checkbox"/> glucose is filtered out of the blood <input type="checkbox"/> glucose is (a) small (molecule) <input type="checkbox"/> taken / etc back into the blood /reabsorbed absorbed unqualified <input type="checkbox"/> by active transport	allow absorbed into the blood but not ignore diffusion ignore diffusion	3

b)i)	<p>in a healthy person</p> <p>protein not present because proteins are large (molecules) or because cannot pass through (filter)</p> <p>in person with disease lets protein through (filter)</p> <p>owtte</p>		<p>1</p> <p>1</p>
b)ii)	<p>advantages:</p> <p>up to any three from:</p> <ul style="list-style-type: none"> • no build-up of toxins / keeps blood conc. + constant • prevent high blood pressure • don't need restricted diet / restricted fluid intake or time <p>wasted on dialysis</p> <ul style="list-style-type: none"> • blood clots may result from dialysis • infection may result from dialysis • with dialysis, blood may not clot properly due to anti-clotting drugs • cost issues (ie transplant cheaper) <p>disadvantages :at least one from :</p> <ul style="list-style-type: none"> • rejection / problem finding tissue match • use of immuno-suppressant drugs → other infections • dangers during operation / example described 	<p>Ignore 'kidney works all the time'</p> <p>must have at least one advantage and</p> <p>at least one disadvantage for full marks</p>	<p>3</p> <p>1</p>

Total marks			9

QUESTION 3

QUESTION	ANSWER	EXTRA INFORMATION	MARKS								
a)	178	ignore working or lack of working correct working: 180 - 2 but no answer / wrong answer = 1 mark	2								
b)	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 50px; height: 50px;"></td> <td style="width: 50px; height: 50px;"></td> </tr> <tr> <td style="text-align: center;">higher</td> <td style="text-align: center;">low</td> </tr> <tr> <td style="text-align: center;">lower</td> <td style="text-align: center;">high</td> </tr> <tr> <td style="text-align: center;">lower</td> <td style="text-align: center;">high</td> </tr> </table>			higher	low	lower	high	lower	high	all 4 cells correct = 2 marks 2 or 3 cells correct = 1 mark 0 or 1 cells correct = 0 mark	2
higher	low										
lower	high										
lower	high										
Total marks			4								

QUESTION 4

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	A		1
a)ii)	(protein) molecule is large cannot pass through filter		1 1
b)	B is taken back into the blood or B is reabsorbed reabsorbed completely or reabsorbed after filtration		1 1

c)	RBC is too big to pass through filter Haemoglobin is inside red blood cells or haemoglobin released when red blood cell bursts Haemoglobin is small enough to pass through filter or haemoglobin diameter < pore diameter		1 1
Total marks			8

QUESTION 5

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	water		1
a)ii)	small		1
a)iii)	3.15		1
b)i)	21 000		1
b)ii)	2 years		1
b)iii)	prevent rejection		1
Total marks			6

QUESTION 6

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	protein		1
a)ii)	(protein molecules too) large cannot pass through filter or can't leave blood or can't pass into kidney tubule / named part	NB holes in the filter are too small = 2 marks	1 2
b)	any four from: • use of partially permeable membrane or only small		4

	<p>molecules can pass through membrane</p> <ul style="list-style-type: none"> • dialysis fluid has 'ideal' concentrations of solutes • diffusion of waste substances out of blood <p>or</p> <p>waste passes from high to low concentration</p> <ul style="list-style-type: none"> • reference to equilibrium (between plasma & dialysis fluid) 		
Total marks			7