

# Kidney 3 MS

## QUESTION 1

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	(37C is the same as human) body temperature		1
a)ii)	any one from: <ul style="list-style-type: none"> <li>• urea</li> <li>• glucose</li> <li>• sodium</li> </ul>	ignore water	1
a)iii)	(as they are) small enough to pass through (the membrane)	allow because there is a high concentration in the fake blood and a low concentration in the water (so will diffuse across)	1
a)iv)	glucose		1
b)i)	any two from: <ul style="list-style-type: none"> <li>• don't have to go to hospital or done at home rather than hospital</li> <li>• less effect on lifestyle / can be mobile</li> <li>• always filtering urea out</li> <li>• don't need a medical professional (to do it for you)</li> </ul>	continuous is insufficient  allow takes a shorter time  allow does not have to be connected to blood vessels ignore 'less painful'	2
Total marks			6

## QUESTION 2

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	Lung		4
b)i	Filtering the blood		1
c)	They will take in water and burst		1 1
d)i)	6		1
d)ii)	less than 28		1
d)iii)	urea not reabsorbed or dialysis (fluid) has removed urea		1
e)i)	antibodies		1
e)ii)	Tissue typing the donor kidney		1
Total marks			8

### QUESTION 3

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	(the kidney) filters the blood  (and then) reabsorbs all of the glucose reabsorbs some of the ions reabsorbs some of the water releases urea (in urine)	ignore refs to hormones and drugs  allow salts ignore minerals	1  1 1 1
b)i	should fall from 28 (to the end of dialysis)	ignore any line drawn after end of dialysis  allow + / - 0.5 square graph line must fall to / below below 15	1
b)ii)	should stay level at about 6 throughout	ignore slight variations allow + / - 1 square ignore any line drawn after end of dialysis	1
c)i)	immune system (produces) antibodies  (which) attack the antigens (on the transplanted kidney)	allow white blood cells / lymphocytes  non-matching antigens insufficient	1 1  1
c)ii)	any one from: <ul style="list-style-type: none"> <li>tissue typing (to find match)</li> <li>treating with drugs that suppress the immune system</li> </ul>	accept treat with  immunosuppressants	1
Total marks			11

### QUESTION 4

QUESTION	ANSWER	EXTRA INFORMATION	MARKS										
a)	<table border="0"> <thead> <tr> <th>Body part</th> <th>Substance</th> </tr> </thead> <tbody> <tr> <td>kidneys</td> <td>urine</td> </tr> <tr> <td>lungs</td> <td>faeces</td> </tr> <tr> <td>skin</td> <td>sweat</td> </tr> <tr> <td></td> <td>breath</td> </tr> </tbody> </table>	Body part	Substance	kidneys	urine	lungs	faeces	skin	sweat		breath	1 mark per correct line extra line from a body part cancels the mark	3
Body part	Substance												
kidneys	urine												
lungs	faeces												
skin	sweat												
	breath												

b)i	1800 cm <sup>3</sup>		1
b)ii)	decreases		1
b)iii)	any one from: <input type="checkbox"/> less / no sweat <input type="checkbox"/> less / <input type="checkbox"/> no cooling <input type="checkbox"/> (needed) <input type="checkbox"/> less / reduce / no heat loss / keep warm		1
c)	increases		1
Total marks			7

### QUESTION 5

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	1800	allow – / minus 1800	1
b)	3200	award both marks for correct answer irrespective of working allow – / minus 3200 award 2 marks for 200 or –200 irrespective of working allow ecf from part (a) for both routes to 2 marks if no answer or incorrect answer then indication of addition of 1800 or their (a), 1000 and 400 gains 1 mark	2
c)	drink more / take in more from food & drink  200 (cm <sup>3</sup> )	allow ecf from (b), ie if answer to (b) is less than 3000 then accept drink less if answer to (b) is exactly 3000 accept do nothing accept ecf from (b) answer should be difference between (b) and 3000 if answer to (b) is 3000 accept they are the same NB drink / take in 3200 (cm <sup>3</sup> ) of water = 1 mark drink / take in 200 (cm <sup>3</sup> ) of water = 2 marks ignore references to exercise / sweat	1  1
Total marks			5