Question number	Answer	Notes	Marks
1 (a) (i)	maintain/control/balance water/salt/concentration (of blood / of body / of cells) / eq;	ignore detects	1
(ii)	lungs / skin / liver;		1
(b) (i)	water / urea / salt / mineral / named ion / eq;	ignore nitrogen / phosphorus	1
(ii)	1. large molecules / too big (to pass through); 2. (ultra) filtration / pressure / eq; 3. glomerulus / Bowman's capsule; 4. stay in blood / eq;	not filtered out of blood =2marks for MP4 and MP 2	3
(iii)	1. respiration / eq; 2. nergy / ATP; 3. (selective) reabsorption / back into blood / eq; 4. <u>proximal</u> convoluted tubule / <u>first</u> coiled tubule / eq; 5. active transport / active uptake;	ignore absorbed alone	3

(Total for Question = 9 marks)

Question number	Answer	Notes	Marks
2 (a) (i)	lungs;		1
(ii)	diaphragm;	allow phonetic spelling	1
(iii)	trachea / windpipe;	eg dyaphram	1
(iv)	bronchus / bronchi;	ignore bronchioles / ignore right and left	1
(b)	balloons inflate / air into balloons / eq; volume (in model) increases / more space (in model) / eq; pressure decreases / eq;	ignore vacuum ignore area	3
(c)	(no) ribs / ribcage; (no) (intercostal) muscles; (no) pleural membranes; (no) movement (of chest) / up and out / expansion;	allow converse	2
(d)	1 rest and exercise / range of exercise / jog and run / eq; 2 (how) count breaths / how many breaths / amount of breaths / volume / eq; 3 for time / seconds / minutes / eq; 4 quantification of exercise / jog for 5 minutes / do 10 press ups; 5 repeat (for reliability);	1 allow if implied 2 ignore measure breathing - need method 3 is measure rate mark not exercise quantified 5 allow average	4
		Total	**13**

Question number	Answer	Notes	Marks
3 (a)	right; atrium and ventricle;	allow plural of atria and ventricles	2
(b) (i)	X same and Y up;		1
(ii)	right and left side separate / septum / aorta connected to the left side / no water in LHS / eq;		1
		Total	4

<table>
<tr><th>Question number</th><th>Answer</th><th>Notes</th><th>Marks</th></tr>
<tr><td>4 (a) (i)</td><td>
<table>
<tr><th>Structure</th><th>Organ</th></tr>
<tr><td>Spongy mesophyll</td><td>leaf</td></tr>
<tr><td>Alveolus</td><td>lung(s);</td></tr>
<tr><td>Nephron</td><td>kidney(s);</td></tr>
<tr><td>Villus</td><td><u>small</u> intestine / duodenum / ileum;</td></tr>
</table>
</td><td></td><td>3</td></tr>
<tr><td>(b) (</td><td>ment of molecules/particles/gases/named molecule;

high conc. to low conc. / down concentration gradient / eq;

passive / eq;</td><td>ignore <u>substances</u>

allow along concentration gradient</td><td>Max 2</td></tr>
<tr><td>(c)</td><td>ultrafiltration / pressure;
glomerulus / Bowman’s capsule / renal capsule;</td><td>ignore filtered alone</td><td>2</td></tr>
</table>

Total 7 marks