

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. energy / 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; <u>volume</u> (in model) increases / more space (in model) / eq; <u>pressure</u> 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 <u>and</u> 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 <u>and</u> ventricle;	allow plural of atria and ventricles	2
(b) (i)	X same <u>and</u> Y up;		1
(ii)	right and left side separate / septum / aorta connected to the left side / no water in LHS / eq;		1
		Total	4

Question number	Answer	Notes	Marks										
4 (a) (i)	<table border="1"> <thead> <tr> <th>Structure</th> <th>Organ</th> </tr> </thead> <tbody> <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> </tbody> </table>	Structure	Organ	Spongy mesophyll	leaf	Alveolus	lung(s);	Nephron	kidney(s);	Villus	<u>small</u> intestine / duodenum / ileum;		3
Structure	Organ												
Spongy mesophyll	leaf												
Alveolus	lung(s);												
Nephron	kidney(s);												
Villus	<u>small</u> intestine / duodenum / ileum;												
(b) (<p>ment of molecules/particles/gases/named molecule;</p> <p>high conc. to low conc. / down concentration gradient / eq;</p> <p>passive / eq;</p>	<p>ignore <u>substances</u></p> <p>allow along concentration gradient</p>	Max 2										
(c)	<p>ultrafiltration / pressure;</p> <p>glomerulus / Bowman's capsule / renal capsule;</p>	<p>ignore filtered alone</p>	2										