

(2)

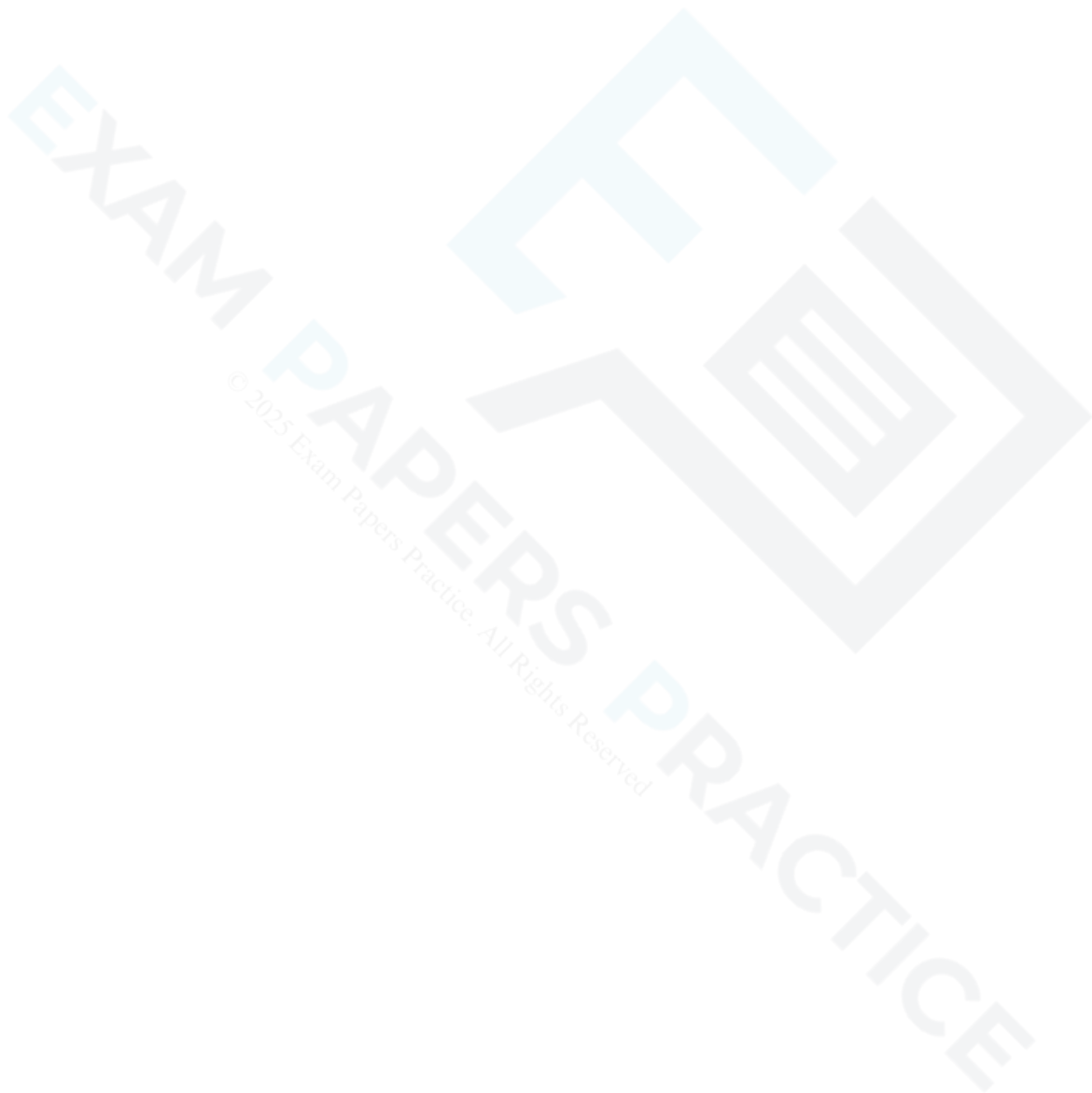
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(Total for question = 13 marks)



Mark Scheme

Q1.

Question number	Answer	Notes	Marks
(a)	<ul style="list-style-type: none"> oxygen; glucose; 	in any order	2
	<ul style="list-style-type: none"> water; carbon dioxide; 	in any order	2
(b) (i)	<ul style="list-style-type: none"> A to B = 60 seconds; 10 breaths during that period = 10 per minute; 		2
(ii)	<ul style="list-style-type: none"> 19.5 - 13.5 squares of movement = 6 squares; 1dm³ = 4 squares; 6/4 = 1.5dm³; 		3
(c)	<ul style="list-style-type: none"> peaks/troughs higher/lower; closer together; 		2
Total 11 marks			

Q2.

Question number	Answer	Notes	Marks
(a) (i)	C; (red blood cells)		1
(ii)	any three from <ul style="list-style-type: none"> more carbon dioxide (1) less oxygen (1) moister (1) warmer (1) 		3
(iii)	<ul style="list-style-type: none"> large surface area (1) thin (walled)/wall one cell thick (1) good blood supply (1) moist lining (1) 		3
(b)	<ul style="list-style-type: none"> thin wall (1) narrow lumen (1) 	Allow references to only one blood cell passing through	2
(c)	<ul style="list-style-type: none"> breathing (out)/exhalation more difficult/not smooth/shortness of breath/faster breathing rate (1) as lungs would not squeeze out air/forced exhalation(1) 		2

Q3.

Question number	Answer	Notes	Marks									
(a) (i)	any four of <ul style="list-style-type: none">exhale through tube A;time how long for limewater to go cloudy;replace limewater;inhale through tube B;compare time to go cloudy;		4 marks									
(ii)	<ul style="list-style-type: none">more carbon dioxide in exhaled air;quicker/less time to go cloudy with exhaled air;produced by respiration;		3 marks									
(b) (i)	<table><tr><th>Lung volume</th><th>Letter</th><th>Volume in dm³</th></tr><tr><td>tidal volume</td><td>W;</td><td>0.4;</td></tr><tr><td>vital capacity</td><td>Z;</td><td>2.25;</td></tr></table>	Lung volume	Letter	Volume in dm ³	tidal volume	W;	0.4;	vital capacity	Z;	2.25;		4 marks
Lung volume	Letter	Volume in dm ³										
tidal volume	W;	0.4;										
vital capacity	Z;	2.25;										
(ii)	<ul style="list-style-type: none">deep/maximum inhale;followed by maximum/forcefully exhale;	must be in correct order	2 marks									
Total 13 marks												