

Gas Exchange in Humans

Mark Scheme 2

Level	IGCSE
Subject	Biology
Exam Board	CIE
Topic	Gas Exchange in Humans
Paper Type	(Extended) Theory Paper
Booklet	Mark Scheme 2

Time Allowed: 27 minutes

Score: /22

Percentage: /100

Question	E Answers	Marks	Additional Guidance
1	<p>(a) lowered / flattened / AW ; increases / AW ; decreases / AW ; higher / greater / more ; into / inside; alveoli ;</p>	6	
	<p>(b) (A / goblet cell) secretes / produces, mucus ; sticky ; collects / traps, particles (in the air) ;</p> <p>cilia, move / beat / waft; mucus moves / removes, away from alveoli / out of trachea / towards larynx / towards mouth / AW ;</p>	max 4	<p><i>ignore</i> hairs direction needed</p>
		[Total: 10]	

2 (a) CAN AWARD ROLE WITHOUT CORRECT NAME
CAN ACCEPT RIB CAGE IN B AND V.V.

part	name	role in breathing in
A ↑ ↓	ribs; Ⓐ rib cage	prevent collapse of thoracic cavity or lungs AW (as a result of pressure changes) AW/ ref. to attachment of muscles/ move up to + increase volume/decrease pressure; R space
B	intercostal muscle;	contracts + to move ribcage up or out/to increase volume of chest cavity or lungs AW/decrease pressure; Ⓡ refs to internal intercostals
C	diaphragm ;	contracts/moves downwards + to increase volume of chest cavity AW/decrease pressure ; Ⓡ ref. to 'space'

max. [6]

(b)(i)

- ref. to cilia + beat/move AW; (R) refs to hairs (R) cilia trap germs
- to move dust/mucus + up or out (of bronchus);
- ref. to secretion/production + of mucus;
- ref. to sticky nature AW;
- to trap + dust/bacteria; (linked to mucus)

max. [4]

(ii) NO MARK FOR AFFECT WITHOUT CORRECT NAMED SUBSTANCE
1 MARK FOR THE SUBSTANCE, 1 MARK FOR EFFECT

(R) carbon monoxide

- nicotine;
- cilia + become paralysed/stop working AW ; (R) killed
- cilia unable to remove mucus from + bronchi/airways AW;
- cell lining AW can be infected by trapped microbes;

- tar;
- ref. to cells become cancerous AW;
- increased production of mucus;
- cilia + become paralysed/stop working AW; (R) killed

- carbon particles;
- increased production of mucus;

max. [2]

.....
Total: [12]
.....