

Gas exchange in humans: practice questions

2 questions • 7 marks • mark scheme at the back

For Cambridge IGCSE Combined Science 0653. **Supplement** is Extended content, only examined on Papers 2 and 4.

Name

Total / 7

- 1** A student counts her breathing rate at rest and after exercise. The results are shown in the table. Calculate the percentage increase in her breathing rate after exercise. Show your working. **[3 marks]**

Breathing rate	
condition	breathing rate / breaths per minute
at rest	18
after exercise	36

Answer =

- 2** **Supplement** **[4 marks]**
- (a) Name the structures in the breathing system where gas exchange takes place. [1] (b) Describe three features of the structures named in (a) that make them efficient gas exchange surfaces. [3]

Mark scheme

One mark for each point unless a maximum is given. Words in brackets are not needed for the mark.

1. [3]

- increase = $36 - 18 = 18$ breaths per minute (1)
- $18 \div 18 \times 100$ (1)
- 100% (1)

2. [4] **Supplement**

- (a) alveoli (1)
- (b) large surface area (1)
- thin / walls one cell thick / short diffusion distance (1)
- good blood supply / network of capillaries (1)
- good ventilation with air / breathing (1)
- Max 3 for (b)