

6.4 Gas Exchange

Question Paper

Course	DP IB Biology
Section	6. Human Physiology
Topic	6.4 Gas Exchange
Difficulty	Easy

Time allowed: 10
Score: /5
Percentage: /100

Question 1

Which row of the table describes the best overall conditions for gas exchange in the lungs?

	Surface Area	Diffusion Pathway	Concentration Gradient
A.	Large	Long	Steep
B.	Large	Short	Steep
C.	Large	Short	Shallow
D.	Small	Short	Shallow

[1 mark]

Question 2

Which row of the table shows the events of inspiration in the correct sequence?

	1	2	3	4
A.	Diaphragm and external intercostal muscles contract	Volume of thorax increases	Thorax pressure drops	Air is drawn into the lungs down its pressure gradient
B.	Thorax expands	Thorax pressure drops	Diaphragm and external intercostal muscles contract	Volume of thorax increases
C.	Air is drawn into the lungs down its pressure gradient	Diaphragm and external intercostal muscles contract	Thorax pressure drops	Volume of thorax increases
D.	Thorax pressure drops	Volume of thorax increases	Thorax expands	Air is drawn into the lungs down its pressure gradient

[1 mark]

Question 3

Which of the following is a feature of forced expiration?

- A. The diaphragm contracts.
- B. The thorax undergoes a drop in pressure.
- C. The internal intercostal muscles contract.
- D. The external intercostal muscles contract.

[1 mark]

Question 4

Which aspects of ventilation are assisted by the solution secreted by type II pneumocytes?

- I. Dissolving of oxygen gas.
 - II. Recoil of alveolar walls during expiration.
 - III. Preventing alveoli from collapsing.
 - IV. Diffusion of carbon dioxide gas into the alveoli.
- A. I, II, and IV only.
B. I and IV only.
C. I, III, and IV only.
D. I and III only.

[1 mark]

Question 5

Patients with emphysema are often prescribed oxygen cylinders to breathe from. The oxygen concentration in a cylinder is around 90%, compared to 21% in atmospheric air.

How does breathing concentrated oxygen increase the effectiveness of the lungs?

- A. Increases concentration gradient.
- B. Assists expiration of stale air.
- C. Makes breathing easier.
- D. Decreases diffusion pathway.

[1 mark]