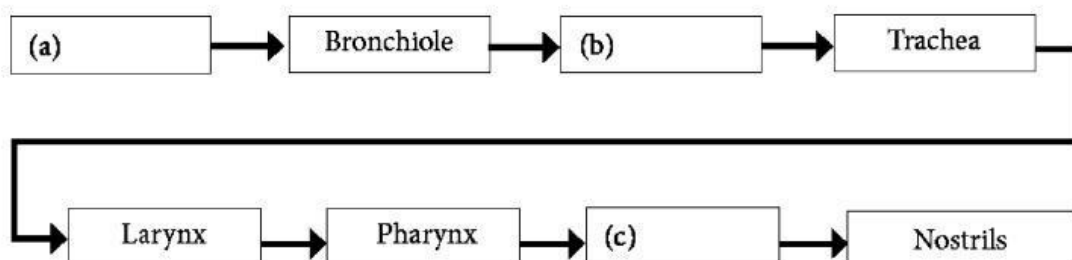


Answer the following questions:

1. Complete the following flow chart to show the direction of air that is breathed out from the lungs.



2. Figure 1 shows the human respiratory system.

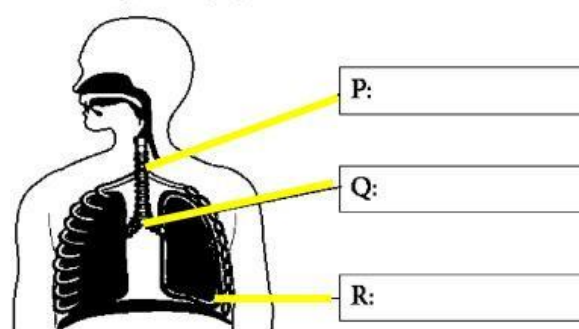


Figure 1

Label P, Q and R in Figure 1 using the following words:



3. Figure 2 shows the breathing mechanism during exhalation.

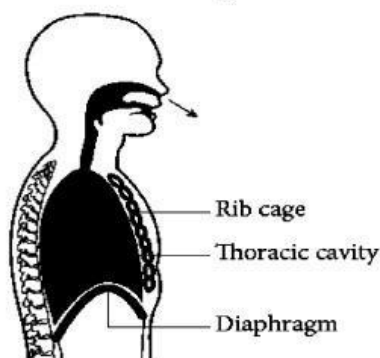


Figure 2

Write TRUE or FALSE for each statements in the column below

(a) Air leaves the lungs when the diaphragm moves inwards	
(b) When exhaling, the rib cage moves downwards.	
(c) Air pressure is higher in the lungs	
(d) Volume of thoracic cavity increases	

4. Write true or false at the statements below

- (a) Percentage of oxygen in inhaled air is lower than in exhaled air.
- (b) Percentage of oxygen in inhaled air is higher than in exhaled air.
- (c) Percentage of carbon dioxide in inhaled air is lower than in exhaled air.
- (d) Percentage of carbon dioxide in exhaled air is higher than in inhaled air.

5. Fill in the blanks for all questions below

(a) What is the function of haemoglobin in the human respiratory system?

Answer: Haemoglobin _____ oxygen from the red blood cell to _____ cells

(b) What is the importance of the characteristic of oxyhaemoglobin as an unstable compound in gaseous exchange in the body?

Answer: Oxyhaemoglobin easily _____ into haemoglobin and oxygen when it reaches body cells so that oxygen can _____ into the cells.

6. Salma is an asthma patient.

(a) Why does the doctor advise Salma to reduce her visits to botanical gardens during Spring?

Answer: Salma may be allergic to _____. In Spring, more pollen is released from _____. When Salma _____ air containing pollen, there is a higher risk of her getting an _____ attack

(b) Explain why industrial areas, and construction sites should be avoided by Salma.

Explanation : That areas produces a lot of haze, _____ and _____ that also cause asthma attacks in asthma patients.

7. (a) Choose the correct adaptation for each factors that affect the efficiency of the alveolus to maximise gaseous exchange in the human body.

- i) Thickness of the wall
- ii) Moisture of the wall
- iii) Surface area
- iv) Network of capillaries

(b) Match the respiratory diseases below with its correct symptoms

RESPIRATORY DISEASE

Asthma	shortness of breath, persistent coughing and insomnia.
Bronchitis	Persistent coughing, blood in the phlegm and feeling pain when breathing
Emphysema	shortness of breath, pain when breathing and feeling tired from doing even a light task. Cannot be cured
Lung cancer	shortness of breath, wheezing and coughing.

c) Choose the correct causes for every respiratory diseases below

i)	Asthma is caused by		dust , haze and		
ii)	Bronchitis is caused by		and irritants in		smoke
iii)	Emphysema is caused by		in cigarette smoke		
iv)	Lung cancer is caused by		in cigarette smoke		

8. Select the correct **answer about** ways to maintain the health of the respiratory system.

i) You have to _____ smoking to avoid _____ substances found in cigarette smoke from entering the _____ and harming the _____ system.

ii) You have to avoid places with _____ air. To avoid _____ air that contains harmful substances such as _____ tar, carbon _____, _____ dioxide, nitrogen _____, haze, dust and _____.

iii) Have proper _____ and lead a _____ lifestyle.

9. Why should waiting areas for public transport such as LRT stations and bus stands be designated as non-smoking areas?

Users at the waiting areas will become _____ smokers if there are other users nearby who smoke. This is _____ to their health.

10. (a) Fill in the blank at the statements about the similarity in the gaseous exchange between insects and plants.

Gaseous exchange is through _____ process into cells.

(b) Fill in the blanks by choosing the correct answers given about Insects respiratory system

The insect respiratory system is _____ effective compared to the human respiratory system because the gaseous _____ through _____ diffusion into the cells of insects is easier, _____ and more efficient compared to gaseous exchange through _____ of gases by _____ in the human body.

11. (a) Gas X is harmful to the human respiratory system. Gas X can diffuse into a stationary car with its air conditioning on, windows closed and engine running. Name gas X and explain the effects of the gas in the situation

- Name of gas : _____
- Explanation about the effects of the gas

When the air in a car which contains _____ is inhaled, the gas will combine with _____ to form _____. Therefore, a person in the car will not have _____ oxygen supply which can be fatal

Changes in the volume of air in the lungs of runners X and Y are as shown in Figures 3 (a) and 3 (b).

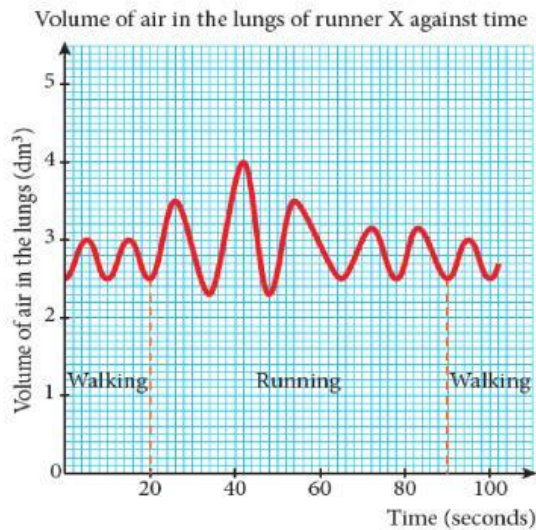


Figure 3(a)

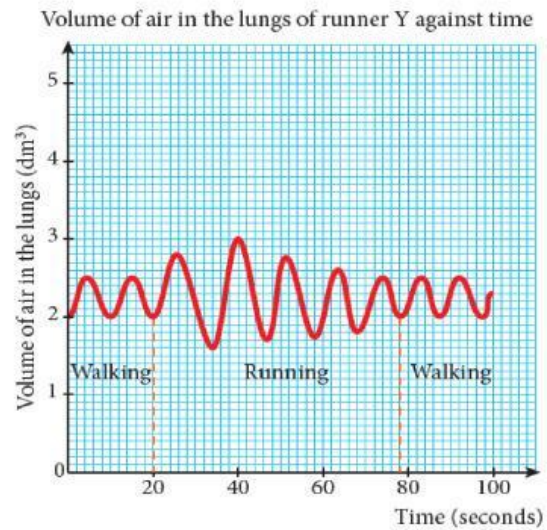


Figure 3(b)

(a) State the maximum volume of air in the lungs of the following runners while walking.

(i) Runner X _____ (ii) Runner Y: _____

(b) State the maximum volume of air in the lungs of the following runners:

(i) Runner X: _____ (ii) Runner Y: _____

(c) From the graphs in Figures 3 (a) and 3 (b), state the relationship between **the types of activity performed and the maximum volume of lungs** of each runner.

The _____ active the activity that is performed, the _____ the maximum volume of the lungs.

d) If one of the runners X or Y is a smoker, which one is the smoker? Explain.

Runner : _____

Reason : Cigarette smoke which _____ the _____ will reduce the maximum volume of air in the human lungs. The maximum volume of air in the lungs of runner Y is _____ therefore runner _____ is a smoker.

(e) How does the **increase in the maximum volume of the lungs** affect the **respiration rate**? Explain.

Increase in the maximum volume of the lungs will _____ the rate of respiration because the rate of gaseous _____ in the lungs is increased