

8B Respiration

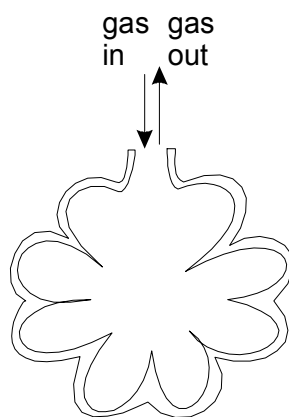
Assessment for learning...year 8 (level 3-6)

Answer all questions:

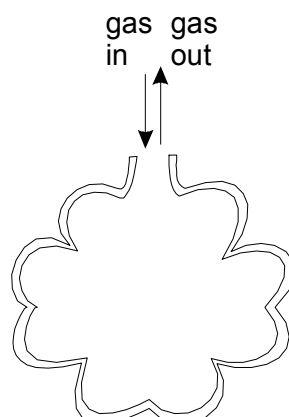
Total marks	27
Time allowed	25 mins.

Question 1:

People who have emphysema have damaged air sacs in their lungs. The diagrams show a section through a normal air sac and a section through a damaged air sac.



normal air sac



damaged air sac

(a) Gas exchange takes place at the inside surface of the air sac when a person breathes.

(i) Which **two** gases are exchanged at this surface of the air sac?

..... and

1 mark

(ii) The amount of gas exchanged is smaller in a damaged air sac. Explain why.

.....
.....

1 mark

(b) The list shows four substances present in cigarette smoke.

carbon particles carbon monoxide nicotine tar

Choose from the list the substance which:

(i) causes addiction to smoking cigarettes;

.....

1 mark

(ii) may cause lung cancer;

.....

1 mark

(iii) is carried instead of oxygen in the red blood cells.

.....

1 mark

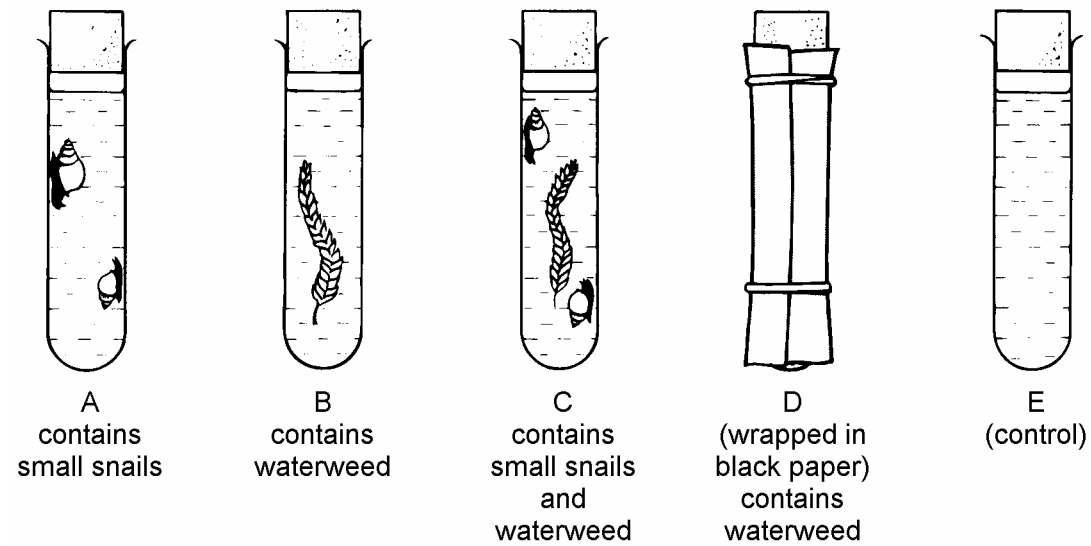
Maximum 5 marks

Question 2:

Hydrogencarbonate indicator solution changes colour when the amount of carbon dioxide dissolved in it changes. This is shown in the table.

colour of indicator solution	amount of dissolved carbon dioxide
reddish orange	same amount of carbon dioxide as in the air
yellow	more carbon dioxide than in the air
purple	less carbon dioxide than in the air

Five test tubes were set up as shown below. Air was bubbled through hydrogencarbonate indicator solution, which was then poured into each test tube.



The test tubes were left in sunlight for two hours.

(a) (i) What would be the colour of the indicator solution in tube A?

.....

1 mark

(ii) Name the process taking place in the cells of the snails which causes this colour change.

.....

1 mark

(b) (i) What would be the colour of the indicator solution in tube B?

.....

1 mark

(ii) Name the process taking place in the cells of the waterweed which causes this colour change.

.....

1 mark

(c) The colour of the indicator solution in tube C did not change. Explain why.

.....

1 mark

Tube D is wrapped to keep the light out. It contains waterweed but no snails.

(d) After twenty four hours in the dark what would be the colour of the indicator solution in tube D?

Tick the correct box.

Reddish orange

Yellow

Purple

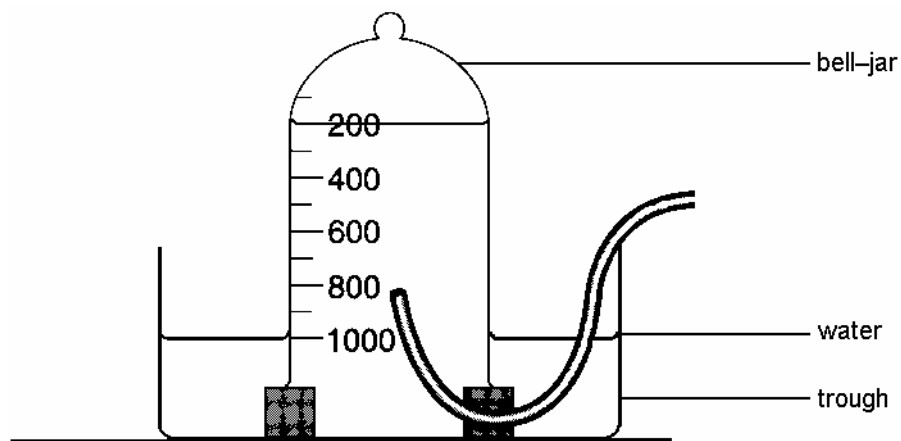
1 mark

Maximum 6 marks

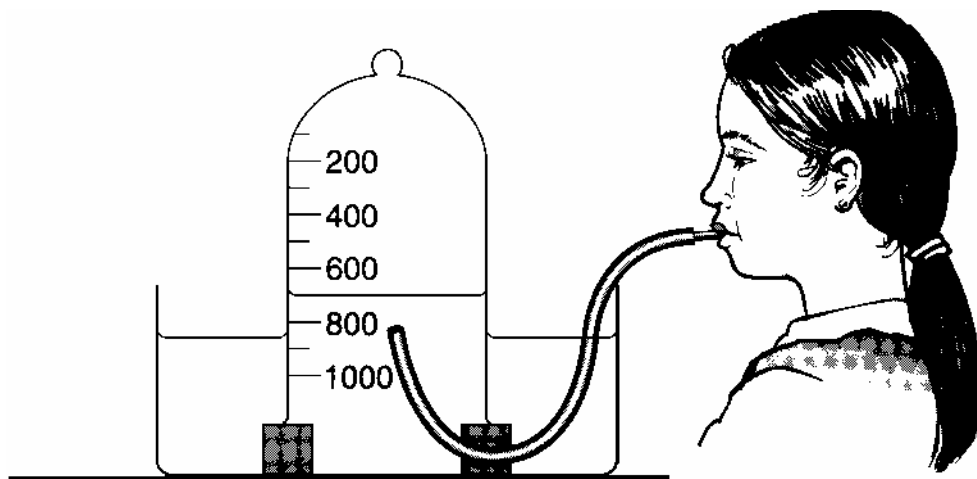
Question 3:

(a) Jasmine was trying to find out how much air she breathed out in one breath. She poured water into a bell-jar and placed it upside down in a trough of water. The bell-jar had a scale marked in cm^3 .

before Jasmine breathed into the bell-jar



after Jasmine breathed into the bell-jar



(i) How much air did Jasmine breathe out?

..... cm³

1 mark

(ii) Air contains carbon dioxide, nitrogen, noble gases, oxygen and water vapour.

Give **three differences** between the composition of the air Jasmine breathed in and the air she breathed out.

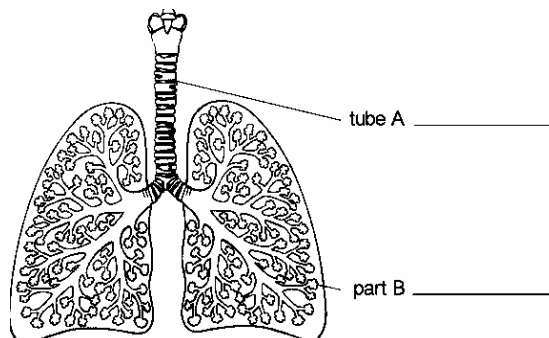
Compared to the air she breathed in, the air she breathed out contained:

1.
2.
3.

3 marks

(b) In the diagram below, tube A connects the lungs to the mouth. Part B is a part of the lung where gas exchange takes place.

(i) On the diagram, write the names of tube A and part B.



2 marks

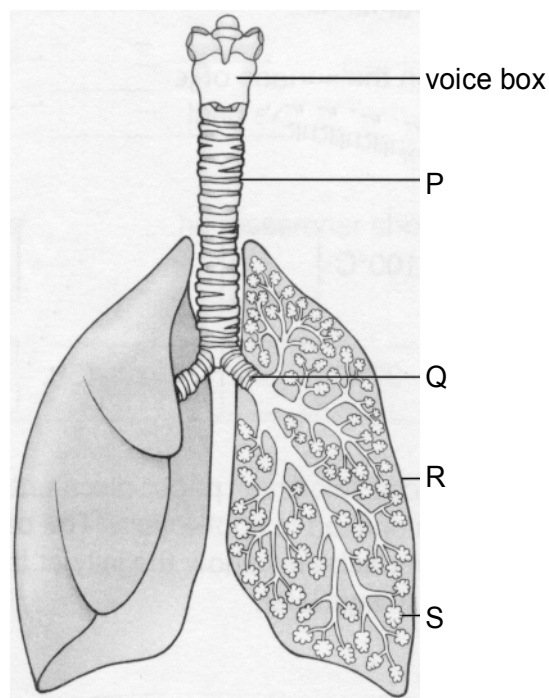
(ii) In the wall of tube A there are 'rings' of a stiff material called cartilage. Suggest **one** function of the 'rings' of cartilage.

.....
.....

1 mark
Maximum 7 marks

Question 4:

The diagram below shows part of the respiratory system.



(a) From the diagram, give the letters which label:

(i) the trachea;

1 mark

(ii) alveoli.

1 mark

(b) (i) Which gas passes into the blood from the alveoli?

.....

1 mark

(ii) Which gas passes out of the blood into the alveoli?

.....

1 mark

(c) The walls of the capillaries and the alveoli are very thin.
Why do they need to be thin?

.....
.....

1 mark

(d) There are millions of alveoli in the lungs. They provide a very large surface area.
Why is a large surface area necessary?

.....
.....

1 mark

Maximum 6 marks

Question 5:

(a) Sally measures her pulse rate before swimming ten lengths of a swimming pool. She measures it again afterwards.

What effect will swimming 10 lengths have on her pulse rate?

.....

1 mark

(b) What is the name of the liquid in the circulatory system?

.....

1 mark

(c) The list shows three useful substances and one waste product.
They are all in the liquid in the circulatory system.

Oxygen carbon dioxide glucose vitamins

Which one of these is a waste product that is produced by the body?

.....

1 mark

Maximum 3 marks