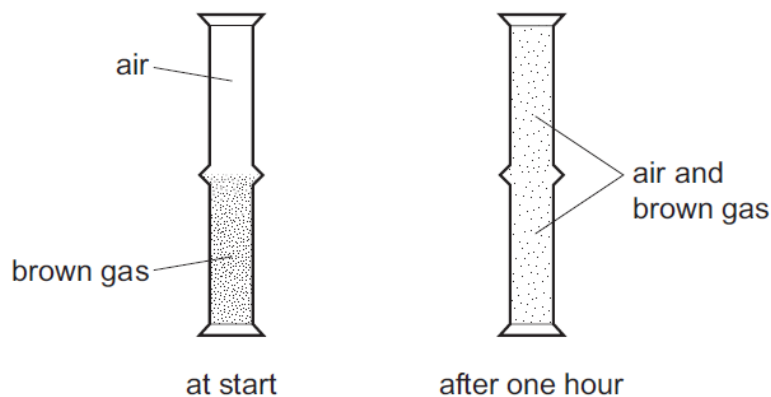


Movement into and out of cells – 2021 IGCSE 0610

1. March/2021/Paper_12/No.7

A jar of air was placed upside down on top of a jar containing a brown gas as shown.



Which process has taken place?

- A diffusion both upwards and downwards
- B diffusion downwards only
- C diffusion upwards only
- D diffusion and osmosis

2. March/2021/Paper_12/No.8

Which row describes active transport?

| | particles move through a cell membrane | | energy from respiration needed |
|---|--|----------------------|--------------------------------|
| | from a region of | to a region of | |
| A | higher concentration | lower concentration | no |
| B | higher concentration | lower concentration | yes |
| C | lower concentration | higher concentration | no |
| D | lower concentration | higher concentration | yes |

(a) Fig. 7.1 is a diagram of the circulatory system.

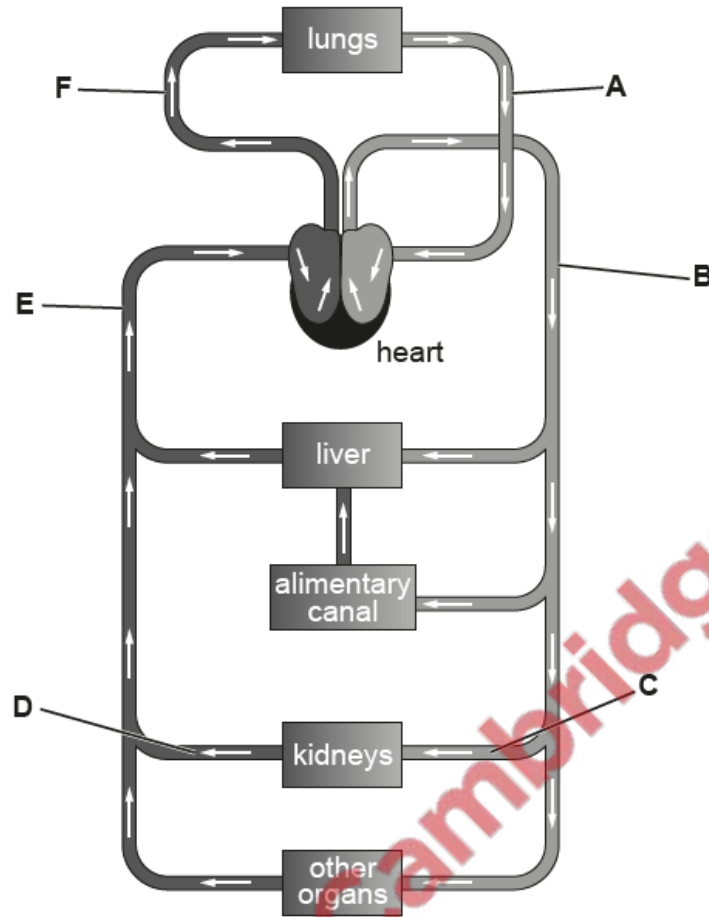


Fig. 7.1

(i) State the names of the blood vessels labelled A, C and E in Fig. 7.1.

A

C

E

[3]

(ii) State the letter in Fig. 7.1 that identifies the blood vessel that contains the highest oxygen concentration.

..... [1]

(b) Describe **three** ways the structure of arteries differs from the structure of veins.

- 1
 -
 - 2
 -
 - 3.....
 -
- [3]

(c) White blood cells are one of the components of blood.

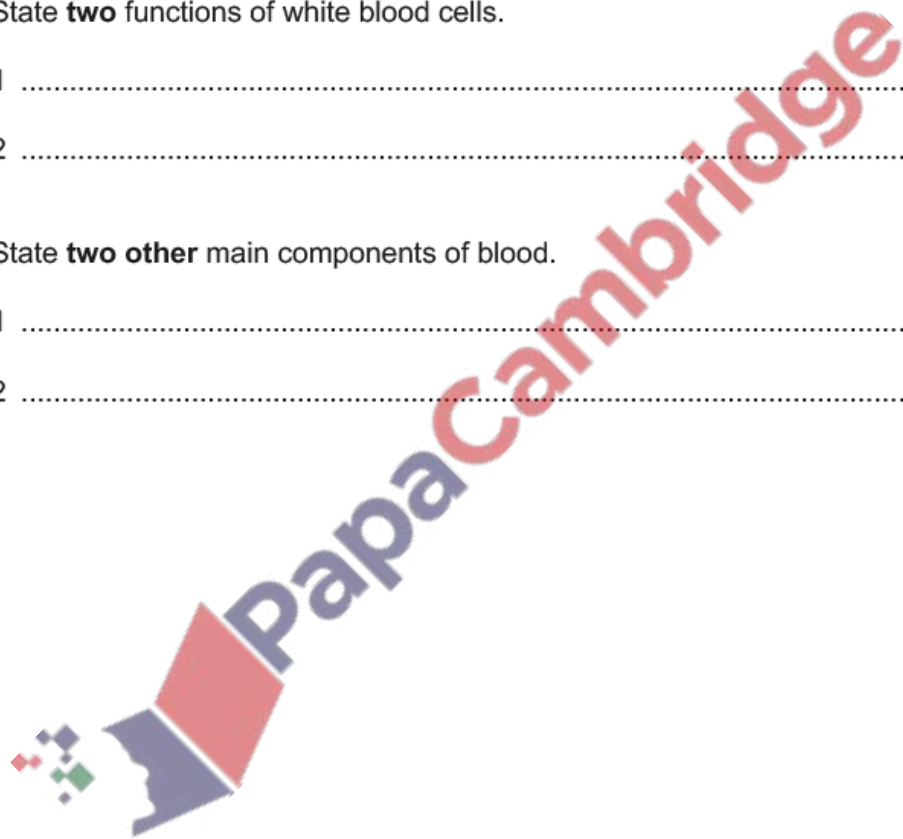
(i) State **two** functions of white blood cells.

- 1
 - 2
- [2]

(ii) State **two other** main components of blood.

- 1
 - 2
- [2]

[Total: 11]



(a) Menstruation is the monthly loss of the lining of the uterus.

The age, in years, when the first menstruation occurred was recorded for one area.

Table 8.1 shows the results.

Table 8.1

| age, in years, when the first menstruation occurred | number of females |
|---|-------------------|
| 8 | 3 |
| 9 | 15 |
| 10 | 62 |
| 11 | 212 |
| 12 | 298 |
| 13 | 251 |
| 14 | 173 |
| 15 | 18 |
| 16 | 11 |
| 17 | 1 |

(i) State the most common age of first menstruation.

..... [1]

(ii) State the number of females that had their first menstruation at 15 years of age.

..... [1]

(b) Describe what happens to the lining of the uterus during a typical menstrual cycle between:

days 1 to 5

.....

days 8 to 14

.....

[2]

(c) Describe what happens in the ovary on day 14 in a typical menstrual cycle.

..... [1]

(d) State the name of the hormone that causes the development of secondary sexual characteristics in boys.

..... [1]

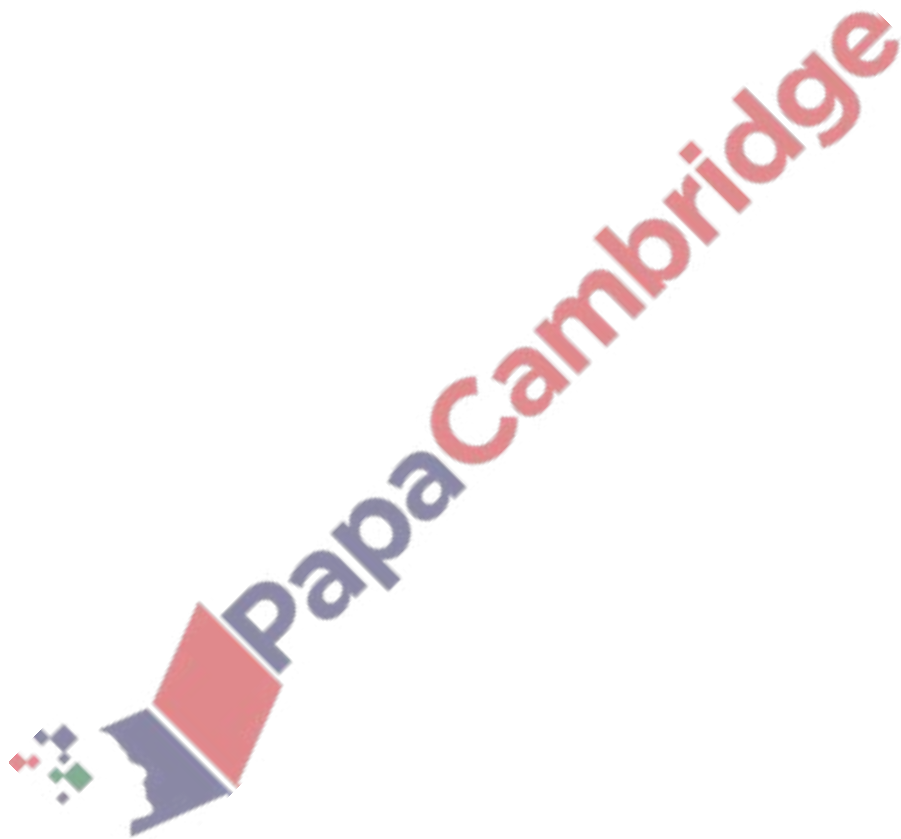
(e) State **two** physical changes that occur in males **and** in females during puberty.

1

2

[2]

[Total: 8]



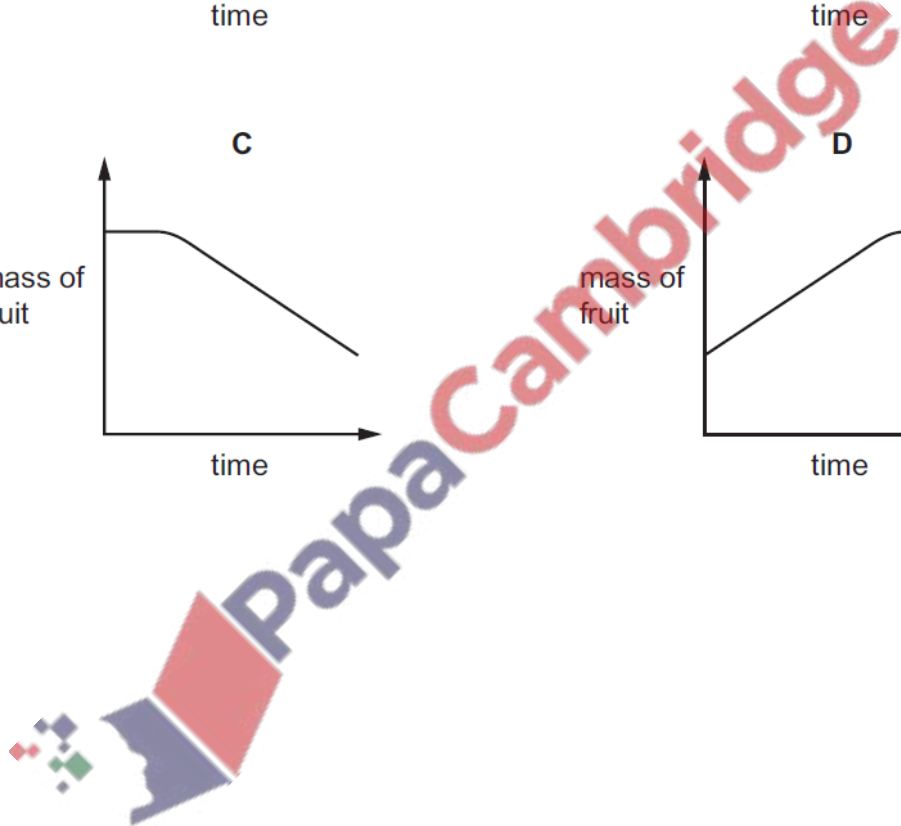
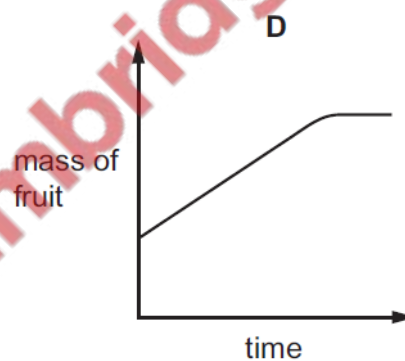
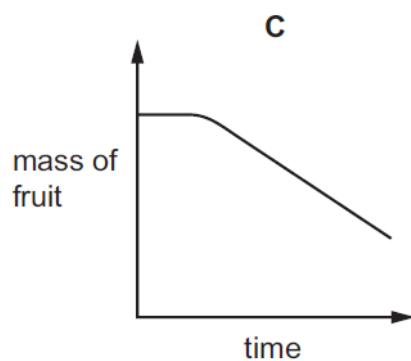
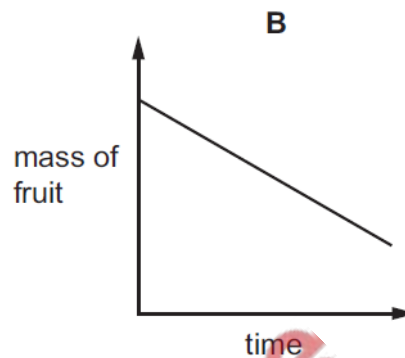
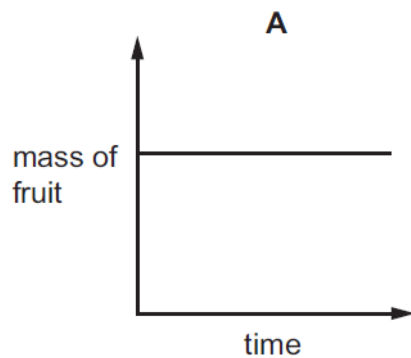
5. **June/2021/Paper_11/No.7**
By which process do oxygen and carbon dioxide move between cells and capillaries?
- A breathing
 - B diffusion
 - C excretion
 - D respiration
6. **June/2021/Paper_11/No.8**
A cylinder of potato tissue was placed in a beaker of very salty water. After one hour the mass of the potato cylinder had decreased.
- Why did this happen?
- A Salt entered the plant tissue by active transport.
 - B Salt left the plant tissue by osmosis.
 - C Water entered the plant tissue by active transport.
 - D Water left the plant tissue by osmosis.
7. **June/2021/Paper_12/No.8**
A cylinder of potato tissue was placed in a concentrated salt solution. After soaking for one hour the potato tissue was observed.
- How will the potato tissue have changed after soaking for one hour?
- A longer and firmer
 - B no change
 - C shorter and softer
 - D shorter and firmer
8. **June/2021/Paper_13/No.7**
By which process do oxygen and carbon dioxide move between cells and capillaries?
- A breathing
 - B diffusion
 - C excretion
 - D respiration

9. June/2021/Paper_13/No.8

Some students investigated osmosis.

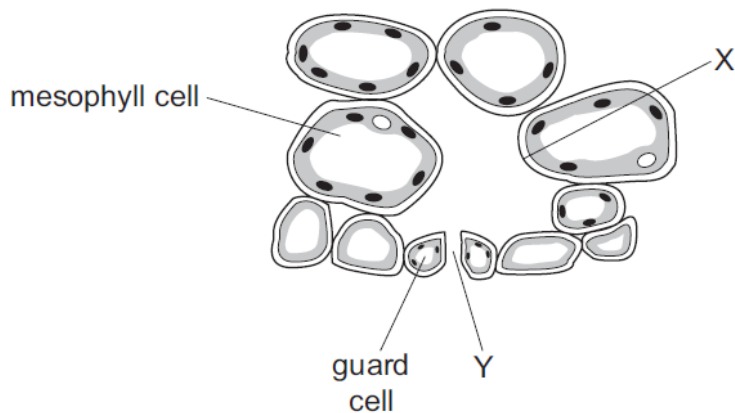
They placed some dried fruit into a beaker of distilled water. The mass of the fruit was measured at regular intervals during a 24-hour period.

Which graph shows the results?



10. June/2021/Paper_13/No.17

The diagram shows one of the stomata of a leaf, and some of the cells that are near it.



During transpiration, what describes the movement of water at X and at Y?

| | movement of water at X | movement of water at Y |
|----------|------------------------|------------------------|
| A | evaporation | diffusion |
| B | evaporation | osmosis |
| C | osmosis | diffusion |
| D | osmosis | osmosis |

11. June/2021/Paper_21/No.7

By which process do oxygen and carbon dioxide move between cells and capillaries?

- A breathing
- B diffusion
- C excretion
- D respiration

12. June/2021/Paper_21/No.8

Which process is involved in the uptake of glucose by the epithelial cells of kidney tubules?

- A active transport
- B osmosis
- C translocation
- D transpiration

13. June/2021/Paper_22/No.15

Statements 1 to 4 describe stages in the development of cholera.

- 1 Chloride ions are secreted into the gut.
- 2 Osmosis causes water to move into the gut.
- 3 The infected person becomes dehydrated.
- 4 Toxins are produced by the pathogenic bacteria.

What is the correct sequence of the four stages?

- A 1 → 2 → 3 → 4
- B 1 → 4 → 3 → 2
- C 4 → 1 → 2 → 3
- D 4 → 1 → 3 → 2

14. June/2021/Paper_23/No.7

By which process do oxygen and carbon dioxide move between cells and capillaries?

- A breathing
- B diffusion
- C excretion
- D respiration

