

## Respiration – 2022 June O Level 5090

### 1. June/2022/Paper\_11/No.17

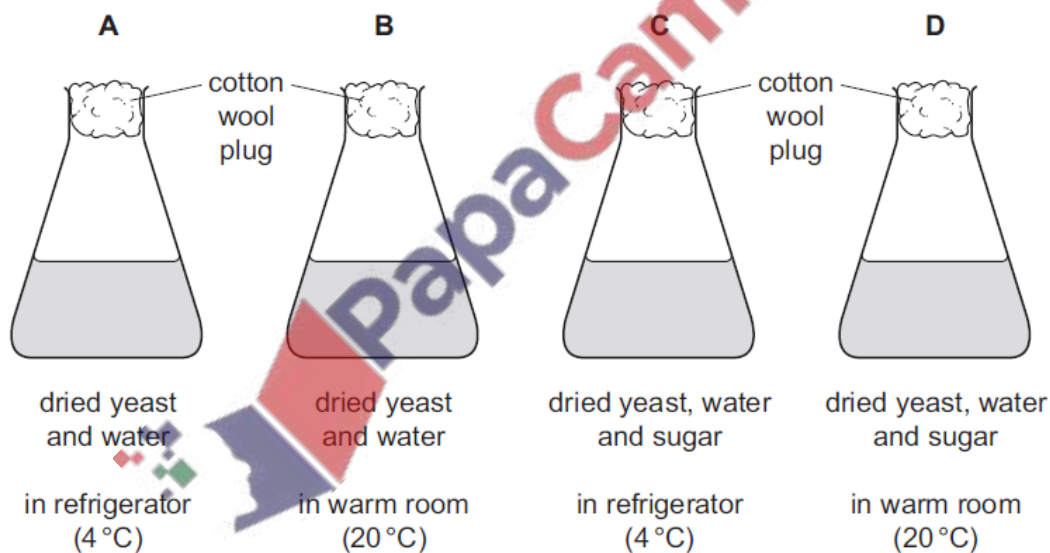
Which equation represents aerobic respiration in plant cells?

- A  $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$
- B  $2\text{C}_2\text{H}_5\text{OH} + 2\text{CO}_2 \rightarrow \text{C}_6\text{H}_{12}\text{O}_6$
- C  $\text{C}_6\text{H}_{12}\text{O}_6 \rightarrow 2\text{C}_2\text{H}_5\text{OH} + 2\text{CO}_2$
- D  $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O}$

### 2. June/2022/Paper\_11/No.18

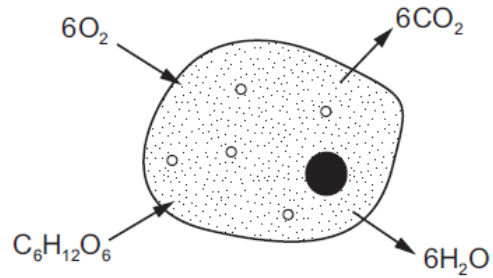
Four flasks are sterilised and set up as shown.

Which flask will show signs of fermentation (anaerobic respiration) after one hour?



3. June/2022/Paper\_12/No.17

The diagram shows a cell.



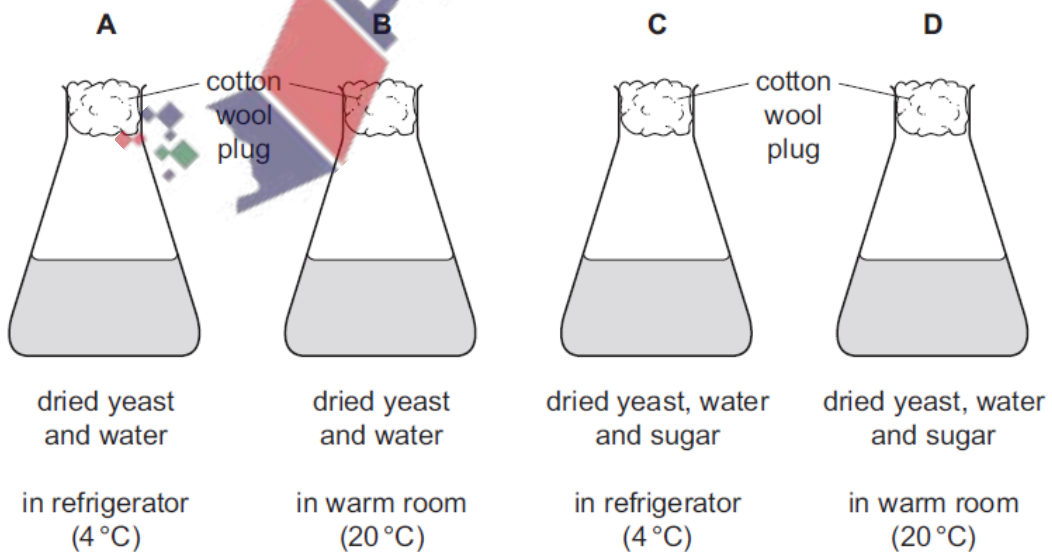
Which process in the cell is represented by the movement of substances shown in the diagram?

- A aerobic respiration
- B anaerobic respiration
- C assimilation
- D photosynthesis

4. June/2022/Paper\_12/No.18

Four flasks are sterilised and set up as shown.

Which flask will show signs of fermentation (anaerobic respiration) after one hour?

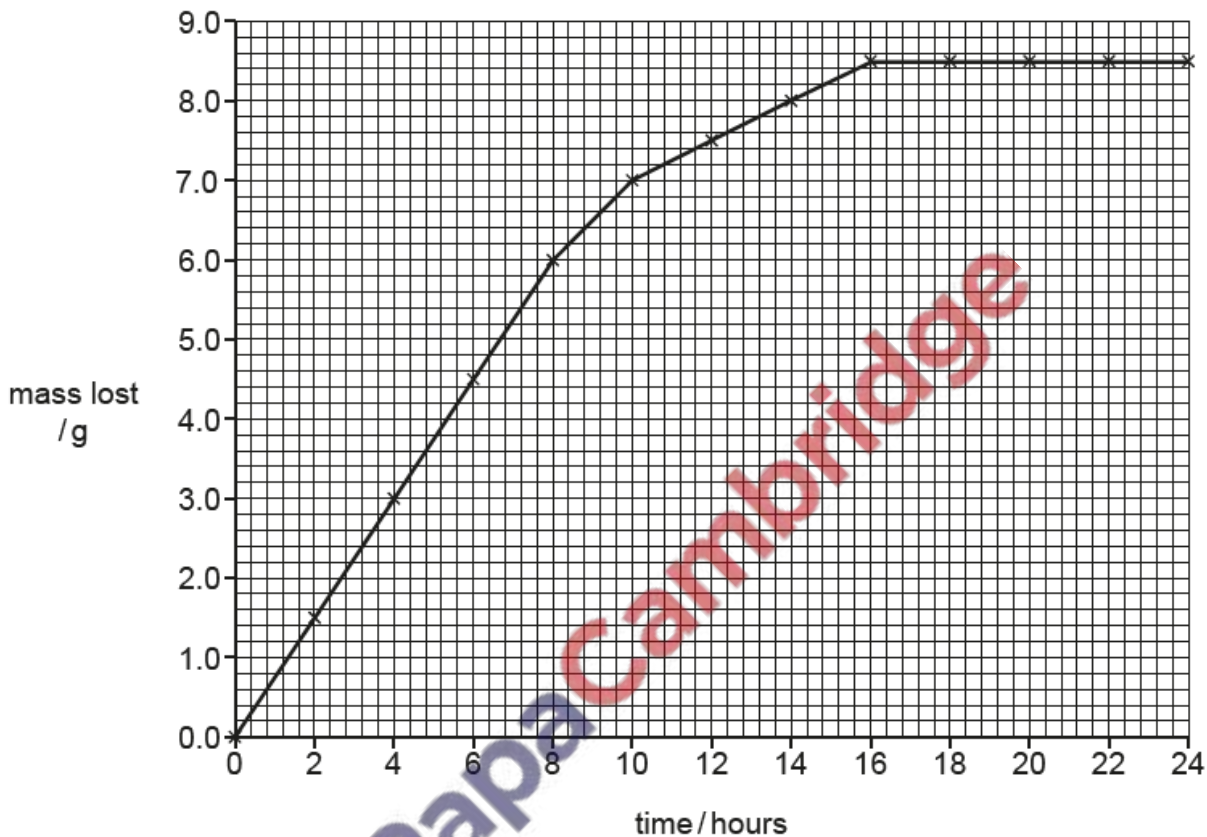


5. June/2022/Paper\_22/No.3(a\_b)

A student carried out two investigations into the action of yeast.

- (a) In the first investigation, the student dissolved 20.0g of glucose in 100cm<sup>3</sup> of water in a beaker. The student then added 3.5g of yeast and used a balance to measure the loss in mass from the beaker over the next 24 hours.

The results of this investigation are shown in the graph.



- (i) Calculate the rate at which mass was lost during the first 6 hours.

Space for working.

..... g per hour [2]

(ii) Explain why mass was lost during the investigation.

.....

.....

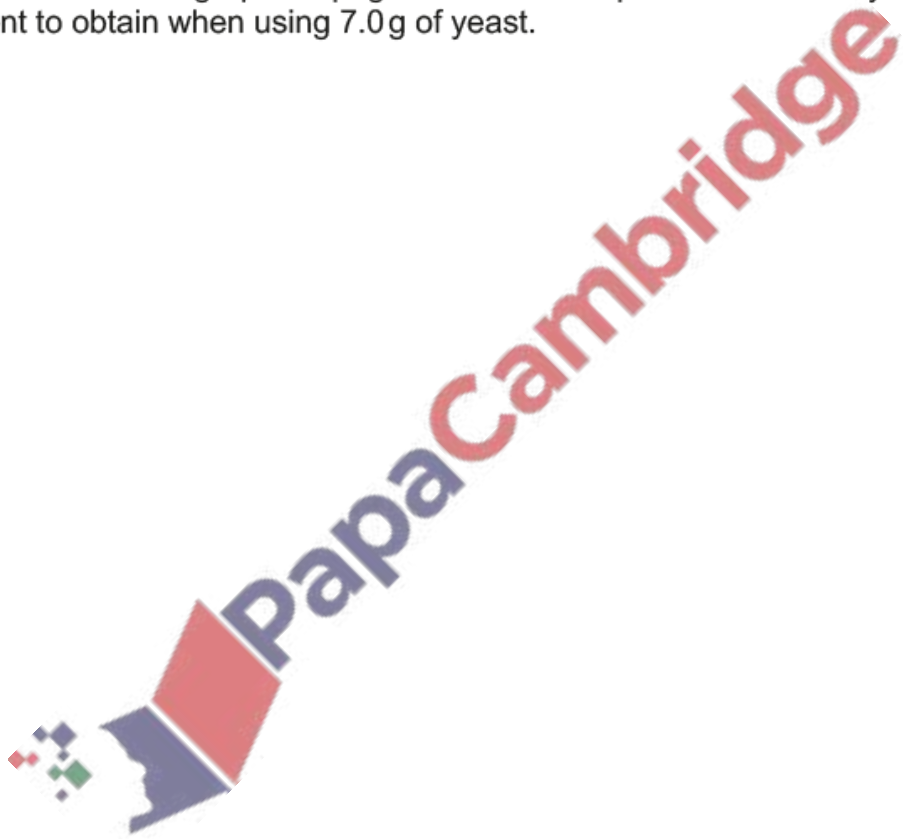
.....

.....

..... [3]

(iii) The student then repeated this first investigation changing **only** the mass of yeast.

Draw a line on the graph on page 6 to show the pattern of results you would expect the student to obtain when using 7.0 g of yeast. [2]



(b) In a second investigation, the student prepared three samples of bread dough.

Each sample of dough had a volume of  $50\text{ cm}^3$  and contained:

- 1 g of yeast
- $25\text{ cm}^3$  of water
- 40 g of flour.

(i) Starch molecules in the flour are used to provide the yeast with a source of glucose.

Describe how the action of a **named** chemical, produced by yeast cells, makes glucose available from starch.

.....

.....

.....

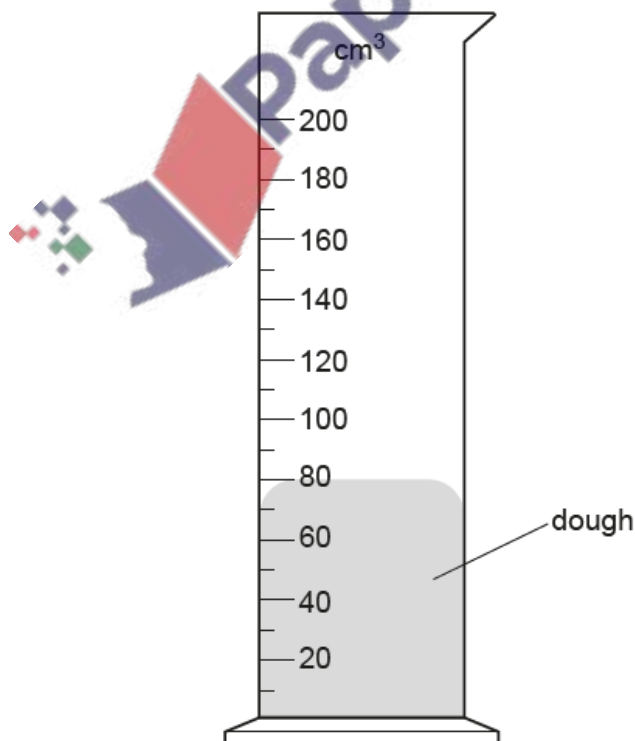
..... [2]

Each sample of dough was placed at the bottom of a  $200\text{ cm}^3$  measuring cylinder.

The three measuring cylinders were then placed in water-baths at different temperatures for 60 minutes. The temperatures chosen were  $20^\circ\text{C}$ ,  $40^\circ\text{C}$  and  $80^\circ\text{C}$ .

After this time, the student measured the volume of dough in each measuring cylinder.

The diagram shows the volume of dough in the measuring cylinder from the water-bath at a temperature of  $20^\circ\text{C}$  at the end of the investigation.



(ii) Estimate the volumes of the dough at the end of the investigation in the other two measuring cylinders, from water-baths at temperatures of:

40 °C ..... cm<sup>3</sup>

80 °C ..... cm<sup>3</sup>

[2]

(iii) Explain the results of this investigation.

.....

.....

.....

.....

.....

.....

.....

.....

[3]

