Respiration – 2022 June O Level 5090

1. June/2022/Paper_11/No.17

Which equation represents aerobic respiration in plant cells?

A $6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$

B $2C_2H_5OH + 2CO_2 \rightarrow C_6H_{12}O_6$

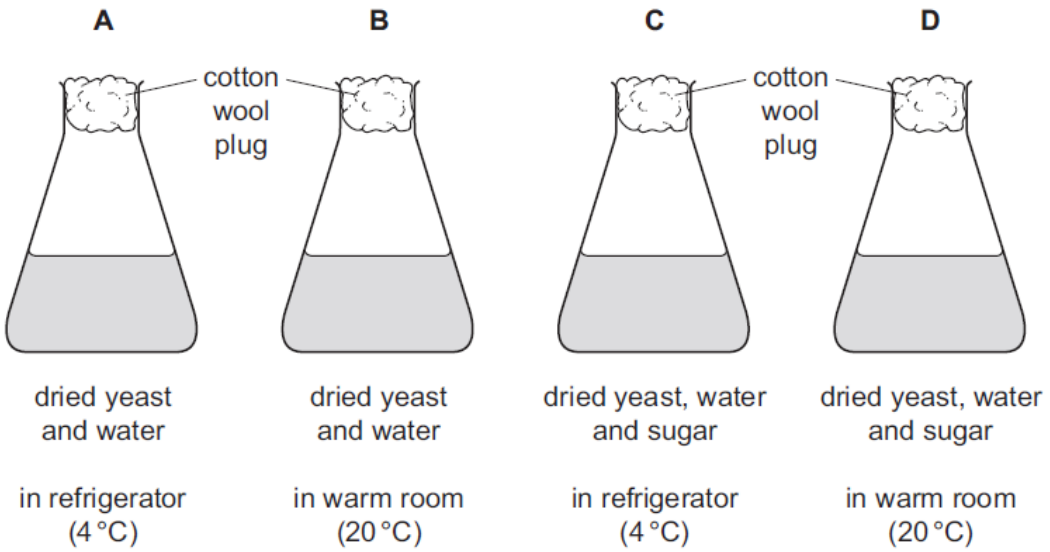
C $C_6H_{12}O_6 \rightarrow 2C_2H_5OH + 2CO_2$

D $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$

2. June/2022/Paper_11/No.18

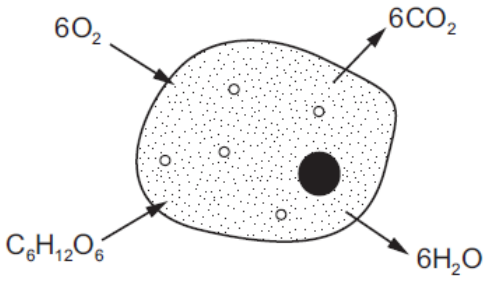
Four flasks are sterilised and set up as shown.

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

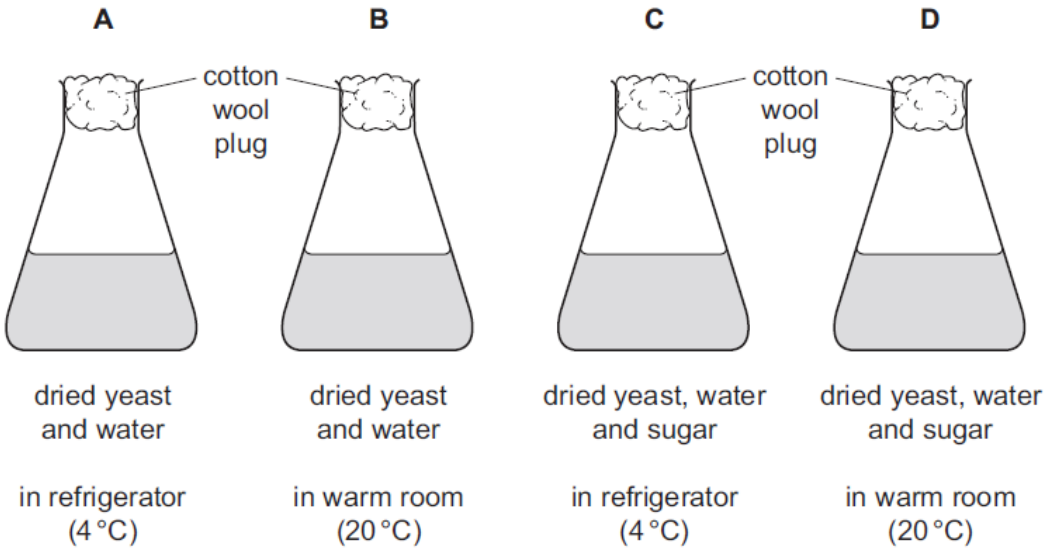
C assimilation

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?

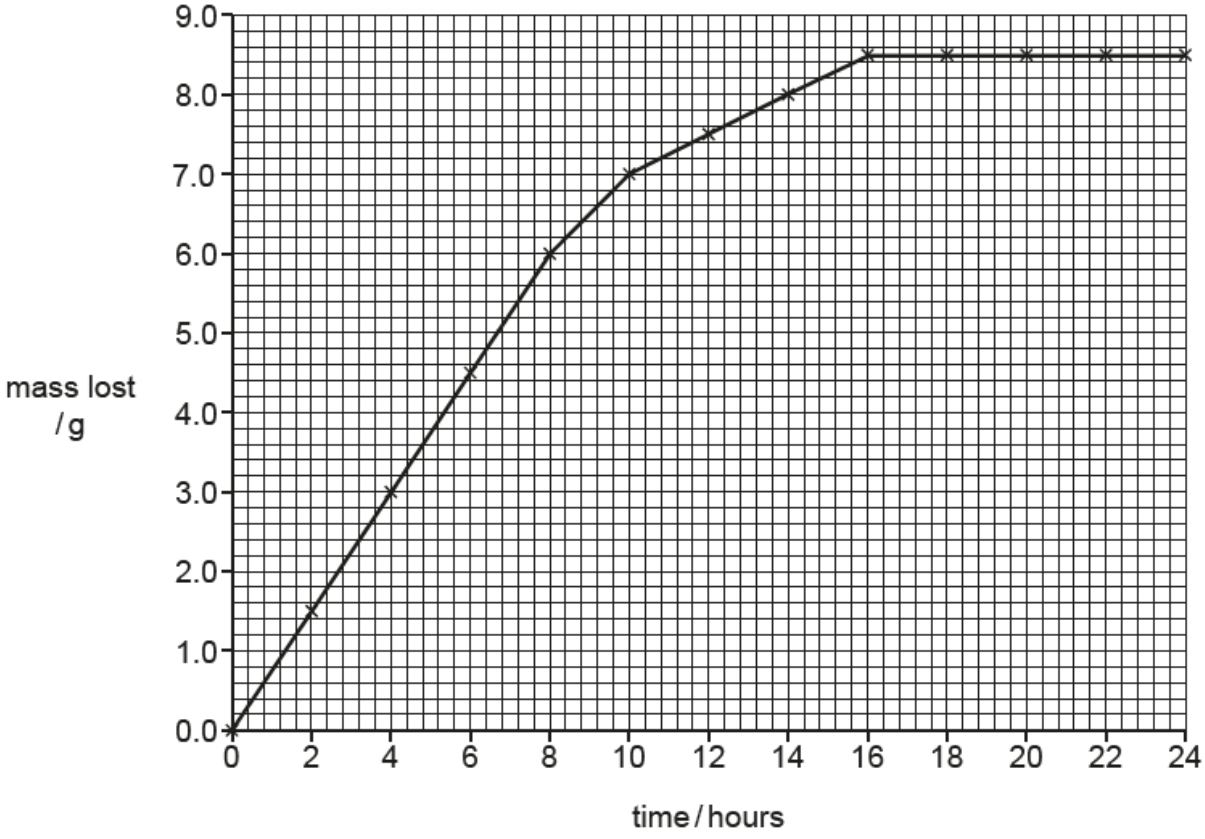


5. June/2022/Paper_22/No.3(a_ b)

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

(a) In the first investigation, the student dissolved 20.0 g of glucose in 100 cm^3 of water in a beaker. The student then added 3.5 g 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.

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..... [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 cm^3 and contained:

- 1 g of yeast
- 25 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.

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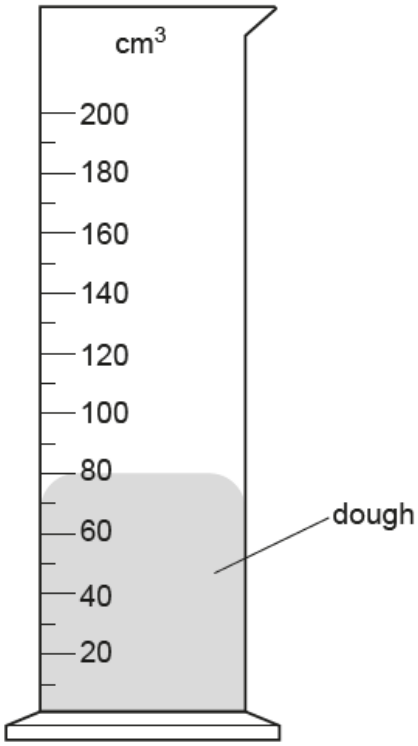
..... [2]

Each sample of dough was placed at the bottom of a 200 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 °C, 40 °C and 80 °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 °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^3

80 °C ..... cm^3

[2]

(iii) Explain the results of this investigation.

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..... [3]