# 12.1 Respiration

# **Question Paper**

Course	CIEIGCSEBiology
Section	12. Respiration
Topic	12.1 Respiration
Difficulty	Hard

Time allowed: 10

Score: /5

Percentage: /100

#### Question 1

Four metabolic reactions that can occur in living organisms are shown below:

1 
$$C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$$

- 2 glucose → lactic acid
- 3  $6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$
- 4  $C_6H_{12}O_6 \rightarrow 2C_2H_5OH + 2CO_2$

Which of the above reactions take place in yeast cells to release energy?

**A** 1 and 2

**B** 1 and 3

**C** 3 and 4

**D** 1 and 4

[1 mark]

#### Question 2

Which of the following processes would release the most energy in a cell from one molecule of glucose?

- 1 Aerobic respiration in yeast
- 2 Aerobic respiration in animals
- 3 Aerobic respiration in plants

A 2 only

**B** 3 only

**C** 1 & 3

**D** All of the above

[1 mark]

#### Question 3

In which conditions would the cells of a dicotyledonous green plant respire?

	mesophyll cell		root hair cell	
	darkness	bright light	darkness	bright light
Α	✓	х	✓	х
В	x	✓	x	x
С	x	х	х	х
D	✓	✓	✓	✓

[1 mark]

### Question 4

Which of the following is the correct balanced symbol equation for aerobic respiration in yeast cells?

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

$$\label{eq:Bounds} \textbf{B} \quad \ \ C_6 H_{12} O_6 \! \to \ 2 \ C_3 H_6 O_3$$

$$\textbf{C} \qquad \text{6 CO}_2 + \text{6 H}_2 \text{O} \rightarrow \ \text{C}_6 \text{H}_{12} \text{O}_6 \ + \text{6 O}_2$$

$$\label{eq:D} \textbf{D} \quad \ \, \textbf{C}_{6}\textbf{H}_{12}\textbf{O}_{6} \, \rightarrow \, \textbf{2} \, \, \textbf{C}_{2}\textbf{H}_{5}\textbf{O}\textbf{H} \, + \, \textbf{2} \, \, \textbf{C}\textbf{O}_{2}$$

[1 mark]

## Question 5

The list below shows four metabolic processes that can occur in living cells

- 1 carbon dioxide + water → glucose + oxygen
- 2 glucose → lactic acid
- 3 glucose + oxygen → carbon dioxide + water
- **4** glucose → alcohol + carbon dioxide

Which row of the table correctly represents the processes that can occur in muscle cells and yeast cells.

	in muscles	in yeast
Α	3 only	1 & 4
В	3 & 4	2 & 3
С	2 only	1, 3 & 4
D	2 & 3	3 & 4

[1 mark]