



## Respiration

1 Define respiration

- An exothermic reaction, which transfers energy from glucose and is continuously occurring in living cells

[ 2 marks ]

2 Where do we get the glucose that we use for respiration from? Where was it made originally?

- From the food that we eat and absorb through our intestines
- It was originally made in the chloroplasts of plant cells

[ 2 marks ]

3 Give three ways that an animal uses the energy it gets from respiration

- To keep warm; contract their muscles; building larger molecules; breaking molecules down etc

[ 3 marks ]

4 There are two types of respiration, aerobic and anaerobic. What is the difference between them?

- Aerobic respiration is more efficient
- And takes place whenever there is enough oxygen
- Anaerobic respiration produces lactic acid

[ 3 marks ]

5 Is respiration an exothermic or endothermic reaction? Explain your answer.

- Exothermic
- Because it releases energy (the energy trapped within glucose molecules)

[ 2 marks ]

6 What is the word and chemical equation for aerobic respiration?

Word - Glucose + Oxygen  $\longrightarrow$  Carbon dioxide + Water

Chemical -  $C_6H_{12}O_6 + O_2 \longrightarrow CO_2 + H_2O$

[ 2 marks ]

7 What is the word equation for anaerobic respiration in animals and plants/yeast?

- Animals - Glucose  $\longrightarrow$  Lactic acid
- Plants/yeast - Glucose  $\longrightarrow$  Ethanol + Carbon dioxide

[ 2 marks ]

8 How can yeast be used in industry?

- To make bread rise
  - As the CO<sub>2</sub> forms little air pockets
- To make beer and wine because of the ethanol it produces

*[ 3 marks ]*

*[ Total 19 marks ]*