C1.2 Cell respiration

What the Cell · DP Biology · worksheet · SL statements C1.2.1–6

Name _____ **Date** _____ **Total** _____ / 40

About 40 minutes, or one section at a time. A calculator is allowed. The number of marks shows how many separate points to make.

Section A: Recall

8 marks

1 **State** the full name of ATP. C1.2.1 **[1]**

2 **List** three processes in a cell that use energy from ATP. C1.2.2 **[3]**

3 **Write** the word equation for aerobic respiration, with glucose as the substrate. C1.2.5 **[2]**

4 **State** the waste product of anaerobic respiration in humans. C1.2.5 **[1]**

5 **State** the part of the cell in which anaerobic respiration occurs. C1.2.5 **[1]**

Section B: Understanding

12 marks

6 **Explain** why ATP is suited to being the energy currency of a cell. C1.2.1 **[3]**

7 **Describe** the energy changes when ATP and ADP interconvert. C1.2.3 **[3]**

8 **Distinguish** between cell respiration and gas exchange. C1.2.4 **[3]**

9 **Explain** why humans use anaerobic respiration in a short sprint, even though the yield of ATP is small. C1.2.5 **[3]**

Section C: Working with data

14 marks

All data in this section are invented for practice. The patterns are realistic.

10 C1.2.6

A respirometer contained 5 g of germinating seeds and a CO_2 absorber. The capillary tube has a cross-section of 1 mm^2.

Temperature / °C	10	20	30	40
Distance moved in 10 min / mm	8	16	34	30

a **Calculate** the rate of respiration at 30°C, in mm^3 per minute per gram. **[3]**

b **Describe** the trend. **[2]**

c **Explain** the change between 30°C and 40°C. **[2]**

d **Explain** why the drop moves towards the seeds. **[3]**

e **Outline** a suitable control, and why it is needed. **[2]**

f **State** two variables that must be controlled. **[2]**

Section D: Longer answer

6 marks

11 **Compare and contrast** the two types of respiration in humans. C1.2.5 **[6]**