

Model Answers: Hard

Q1

The correct answer is **D** because:

- Reaction 1 is the balanced symbol equation for aerobic respiration, which occurs in almost all eukaryotic cells (therefore yeast) when oxygen is available.
- Reaction 4 is the balanced symbol equation for anaerobic respiration in yeast, the incomplete breakdown of glucose produces an alcohol (ethanol) and carbon dioxide.

A is incorrect as	Reaction 2 is the equation for anaerobic respiration in animals.
B & C are incorrect as	Reaction 3 is the balanced symbol equation for photosynthesis in plant and algal cells (which does not release energy), yeast do not photosynthesise.

Q2

The correct answer is **D** because the process of aerobic respiration is essentially the same in all eukaryotic cells, so the theoretical energy released will be the same when one molecule of glucose is broken down in any of the above cells.

Q3

The correct answer is **D** because respiration occurs in **ALL** plant cells **ALL** the time, regardless of where in the plant they are. Light only affects the rate of photosynthesis in plant cells, and obviously being underground root hair cells do not photosynthesise (but that's irrelevant here).

Q4

The correct answer is **A** because in a balanced equation for aerobic respiration in any cell; one molecule of glucose reacts with 6 molecules of oxygen, forming 6 molecules of carbon dioxide and 6 molecules of water. Energy is also released but this is not shown.

B is incorrect as	this equation is the balanced symbol equation for anaerobic respiration in animals (you don't need to know this)
C is incorrect as	this equation is the balanced symbol equation for photosynthesis.
D is incorrect as	this equation is the balanced symbol equation for anaerobic respiration in yeast, not aerobic respiration. .

Q5

The correct answer is **D** because:

- Equation 2 represents anaerobic respiration that occurs in animal cells (such as muscle cells)
- Equation 3 represents aerobic respiration which occurs in all living cells (providing oxygen is available).
- Equation 4 represents anaerobic respiration that occurs in yeast cells.

Equation 1 is photosynthesis which occurs in green plant and algal cells when light is available.