

Bioenergetics

Reading : pages 50-56 in both higher and foundation

Knowledge

1. Where in cells does respiration take place?
2. When does respiration take place in plants and animals?
3. Write the word equation for respiration
4. What is glycogen?
5. When do plants photosynthesise?
6. Write the word equation for photosynthesis.
7. Name three factors that affect the rate of photosynthesis
8. What is a 'limiting factor'?
9. What is anaerobic respiration?
10. Complete the table:

	Aerobic	Anaerobic
Use of oxygen		
Waste products		
Amount of energy released		

11. What is metabolism?
12. Write the word equation for anaerobic respiration in plants and yeast.

Application

1. Describe how the oxygen and glucose enter the cells in the body

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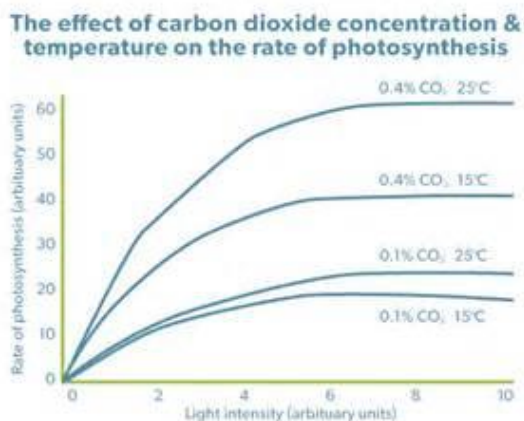
2. Describe and explain the changes to breathing during exercise.

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3. Describe 3 uses for the energy released in respiration

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4. The graph below shows how the rate of photosynthesis can be manipulated in a greenhouse where lettuces are being grown



a) What is the evidence that light was the limiting factor between 0 and 4 arbitrary units?

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b) Describe the effect of increasing the light intensity at a concentration of 0.4% CO<sub>2</sub> and 15°C

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c) Suggest how the farmer could increase the rate beyond the maximum rate achieved of 60 arbitrary units

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d) Explain the factors he may wish to consider before doing so.

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5. Explain why high intensity exercise can only be maintained for short periods of time

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6. Describe the two main types of metabolic reactions and give an example of each

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Higher only

7. What is the equation to show the relationship between light intensity and distance of a lamp?

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