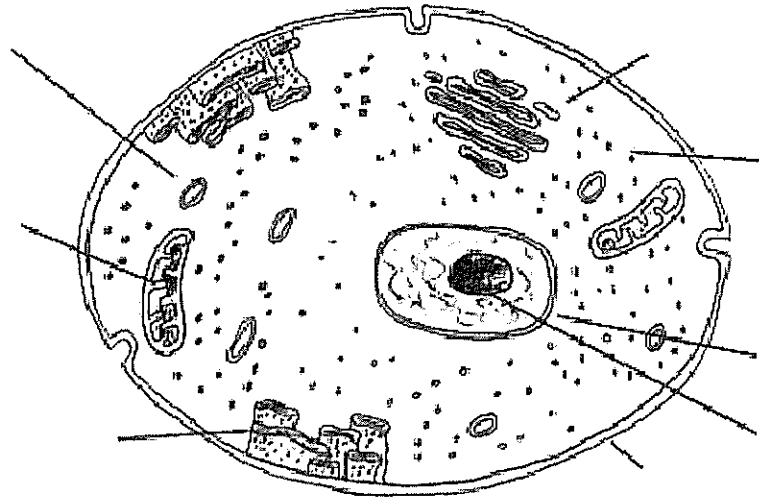


Year 11 Biology

Cellular respiration and fermentation revision questions.

Question 1.

a) Label the organelles pictured in the eukaryotic cell below. Indicate the location of the three stages of cellular respiration.



b) Indicate whether this cell is an animal or a plant cell and your reasoning behind your decision. \_\_\_\_\_

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c) Name the three stages of cellular respiration. Which is common to both cellular respiration and fermentation? \_\_\_\_\_

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c) Where would the three stages of cellular respiration occur in a prokaryotic cell? \_\_\_\_\_

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Question 2. What is the main difference between cellular respiration and fermentation? \_\_\_\_\_

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Question 3. How many ATP does glycolysis produce (net)? \_\_\_\_\_

Question 4. How many ATP does the Krebs cycle produce (net)? \_\_\_\_\_

Question 5. How many ATP does the electron transfer chain produce (net)?

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Question 6. Which stage of cellular respiration requires an investment of energy? \_\_\_\_\_

Question 7. During which stage of cellular respiration is carbon dioxide produced? \_\_\_\_\_

Question 8. During which stage of cellular respiration is water produced?

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Question 9. Cellular respiration is an aerobic process, however, oxygen is only involved in one stage. Name that stage and indicate where it occurs in both eukaryotic cells and prokaryotic cells. \_\_\_\_\_

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Question 10. Name the stage where glucose is required. What happens to glucose during this stage? \_\_\_\_\_

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Question 11. Provide the equation for the process involved in plants producing glucose.

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Question 12. How does glucose enter a cell? \_\_\_\_\_

\_\_\_\_\_

Question 13. How many steps are involved in the process where glucose is broken down? \_\_\_\_\_

Question 14. How many additional ATP are produced when there is no oxygen available after glycolysis? \_\_\_\_\_

Question 15. Match the phrases on the left with the term that best fits it. Use each answer only once.

|   |                 |
|---|-----------------|
| _____ Organisms that produce their own energy   | A. Chloroplasts |
| _____ Site of photosynthesis  | B. Anaerobic    |
| _____ Process that occurs in the mitochondria   | C. Aerobic      |
| _____ $C_6H_{12}O_6$  | D. Glucose      |
| _____ Process that does not require oxygen  | E. ATP          |
| _____ Adenosine triphosphate  | F. Krebs cycle  |
| _____ Energy storing molecule   | G. Glycolysis   |
| _____ Process that requires energy  | H. Energy       |
| _____ The anaerobic process of splitting glucose<br>and forming two molecules of pyruvate | I. ADP          |
| _____ The ability to do work  | J. Autotrophs   |

Question 16. Provide the overall equation for complete aerobic respiration.

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Question 17. Describe the fate of pyruvate once it enters the Krebs cycle.

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Question 18. Where does fermentation occur? \_\_\_\_\_

Question 19. Which products are formed during fermentation in yeast?

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Question 20. Compare and contrast the rates of cellular respiration and photosynthesis at midday and dusk.

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