

Respiration BMZ116B Study Guide

- To perform their many tasks, living cells require _____ from outside sources.
- Energy enters most ecosystems as _____ and leaves as _____.
- Photosynthesis generates _____ and _____ that the mitochondria of eukaryotes use as _____ for cellular respiration.
- Cells harvest the chemical energy stored in organic molecules and use it to regenerate _____, the molecule that drives most cellular work.
- Respiration has three key pathways: _____, the _____, and _____.

A. The Principles of Energy Harvest

1. Cellular respiration and fermentation are catabolic, energy-yielding pathways.

- The arrangement of atoms of organic molecules represents _____ energy.
- Enzymes _____ the systematic degradation of organic molecules that are rich in energy to simpler waste products with _____ energy.
- Some of the released energy is used to do _____; the rest is dissipated as heat.

1. Compare and discuss how animal cells and plant cells store energy and release energy. Be specific!

2. Compare lactic acid fermentation and alcoholic fermentation by describing

_____ electrons _____ to the _____ ETC _____

_____ cellular respiration is formed.

_____ n 4 contributes the most electrons to the respiratory chain

_____ n)? _____ Kreb's _____

_____ ons from a substrate (while accepting hydrogen ions), it is

_____. When NADH donates its electrons to the ETC, (and

_____ h ions) it becomes _____ oxidized _____

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5. NAD carries _____

_____ where most of the ATP of ce

6. Which pathway _____ in questio

_____ (the electron transport syste

7. When NAD accepts electr

_____ reduced _____

_____ therefore looses its Hydroge