

Cell Energetics Review

AP Biology

I. Glycolysis

| Reaction Location | Reactants | Yields: |
|-------------------|-----------------|---------------------|
| | | ATP |
| | Products | NADH•H ⁺ |
| | | FADH ₂ |

II. Mitochondrial Transport

| Reaction Location | Reactants | Yields: |
|-------------------|-----------------|---------------------|
| | | ATP |
| | Products | NADH•H ⁺ |
| | | FADH ₂ |

III. Krebs Cycle

| Reaction Location | Reactants | Yields: |
|-------------------|-----------------|---------------------|
| | | ATP |
| | Products | NADH•H ⁺ |
| | | FADH ₂ |

IV. Electron Transport Chain

| Reaction Location | Reactants | Yields of ATP per: |
|-------------------|-----------------|---------------------|
| | | |
| | Products | NADH•H ⁺ |
| | | FADH ₂ |

- V. How many ATP would be generated by the following molecules entering at the earliest part of the cell respiration pathways and reacted completely:
- a. 12 NADH•H⁺
 - b. 3 Pyruvate
 - c. 4 Acetyl-CoA
 - d. 3 Glucose
- VI. Describe what happens during fermentation. Why does fermentation occur? What product is produced by mammals?
- VII. Describe the light reactions of photosynthesis. Provide the reactants, the products, and a brief description of the pathway.
- VIII. What is cyclic photosynthesis? When is it used?

IX. What is the Calvin Cycle? Describe the reactants, the products, and include a discussion of the energy cost relative to glucose consumption.

X. What role do leaf stomata play in cellular energetics?

XI. CAM and C₄ plants are evolutionary adaptations for what?