



Ecosystem Structure and Dynamics

Answer Key

1. **Answer:** A

Explanation: Primary production is the conversion of solar energy into chemical energy through photosynthesis.

2. **Answer:** D

Explanation: Energy flow is the transfer of energy through the components of the ecosystem.

3. **Answer:** C

Explanation: In an idealized pyramid, 10% of the energy is transferred to the next trophic level. In nature, such efficiencies usually range from 5 to 20% while the remainder is lost to the environment. An implication of this is that the amount of energy for the top consumers is smaller than lower-level consumers.

4. **Answer:** B

Explanation: Producers use some of the energy in cellular respiration so what is left is the net primary production. This remainder is the energy that can be given to an ecosystem in a given period, so it is like the budget of chemical energy available to consumers.

5. **Answer:** B

Explanation: Counting the total amount of primary production in a given time period is called gross primary production, expressed in units of energy or units of biomass (which are often the mass of the vegetation in the area).



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