Cosmo School

Lecture Sheet: 04

Biology (Chapter-13: Environment of Life)

Class: X

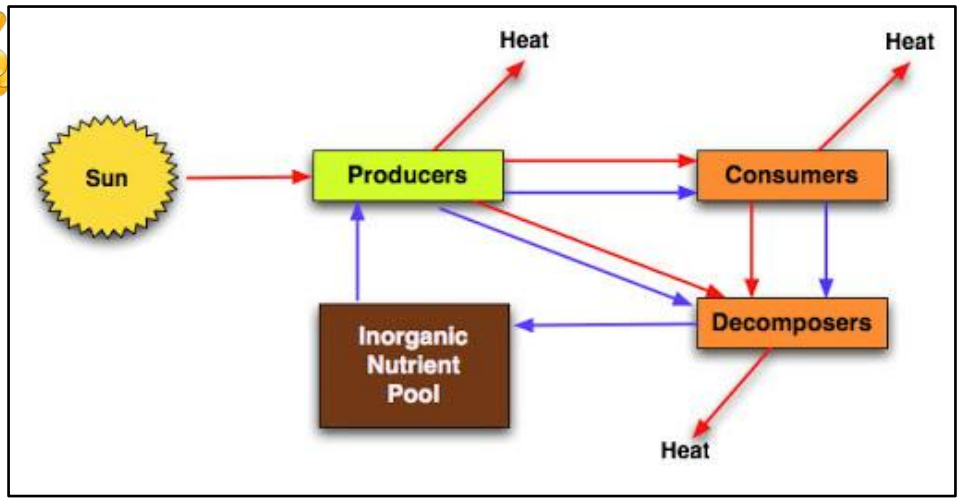
Name of the student: .....Date: 28/09/2020

Energy flow:

The chemical energy of food is the main source of energy required by all living organisms. This energy is transmitted to different trophic levels along the food chain. This energy flow is based on two different laws of thermodynamics:

- First law of thermodynamics, that states that energy can neither be created nor destroyed, it can only change from one form to another.
- Second law of thermodynamics, that states that as energy is transferred more and more of it is wasted.

Energy Flow in Ecosystem:



Q. Describe the flow of energy in the food chain below.

Algae → Zooplankton → Small fish → Big fish → Hawk

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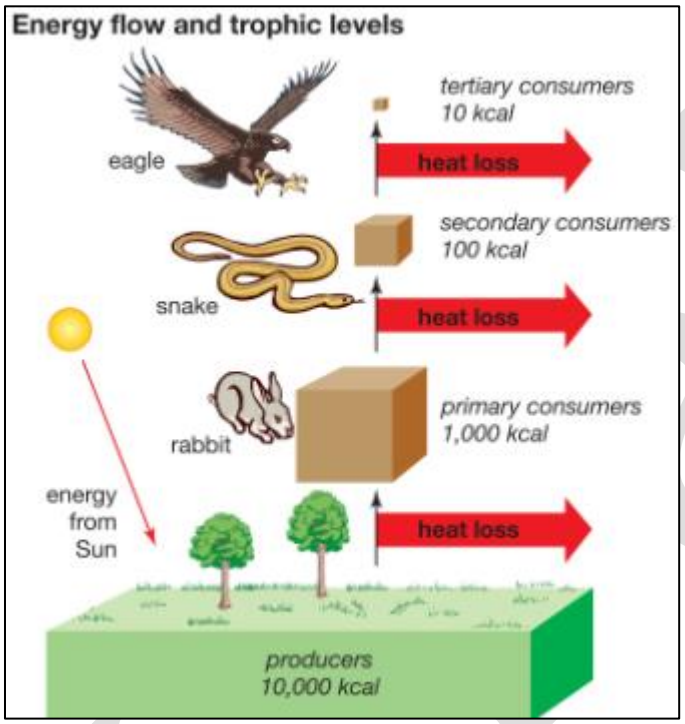
Ten Percent Law:

In a food chain, the energy flow follows the 10 percent law. According to this law, only 10 percent of energy is transferred from one trophic level to the other; rest is lost into the atmosphere. This is clearly explained in the following figure and is represented as an energy pyramid.



Q. Algae → Zooplankton → Small fish → Big fish → Hawk. If the algae get 900 kcal energy, how much energy will the hawk get?

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