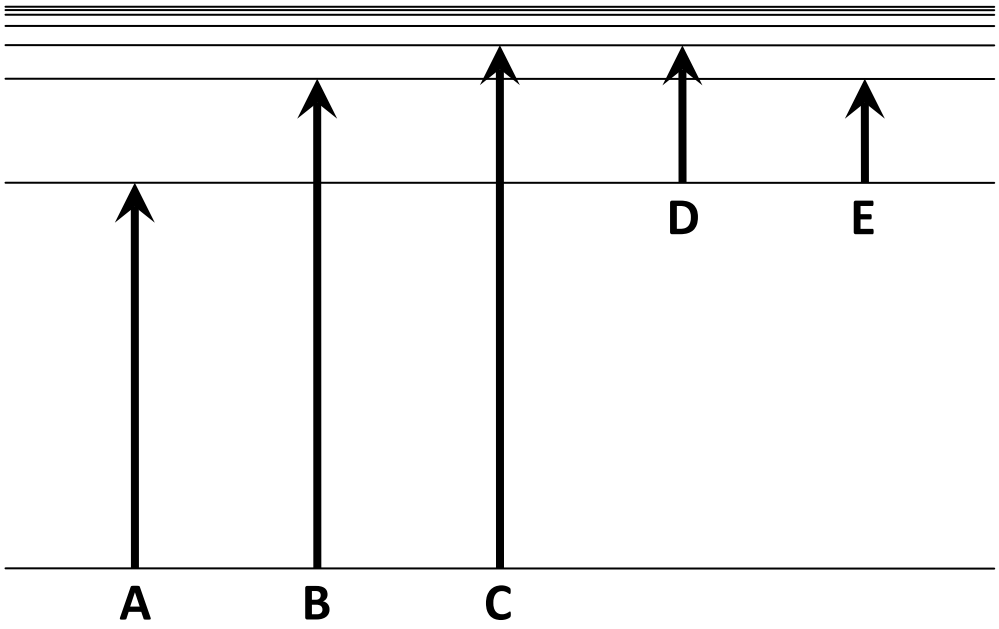
Astronomy Ranking Task:
Electron Transitions

Exercise #2

Description: The figure below represents an energy level diagram for a fictitious atom. Five possible electron transitions are indicated, labeled A through E.



A. Ranking instructions: Rank the energies of the photons emitted with each transition.

Ranking Order: Greatest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ Least

Or, the same amount of energy is emitted with each transition. ____ (indicate with a check mark)

Or, there is no energy emitted with any of these transitions. ____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:

_____

_____

_____

_____

_____

B. Ranking instructions: Rank the wavelengths of the photons associated with each transition.

Ranking Order: Shortest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ Longest

Or, the photons associated with the transitions all have the same wavelength. ____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:

_____

_____

_____

_____

_____

C. Ranking instructions: Rank the frequencies of the photons associated with each transition.

Ranking Order: Lowest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ Highest

Or, the photons associated with the transitions all have the same frequency. ____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:

_____

_____

_____

_____

_____