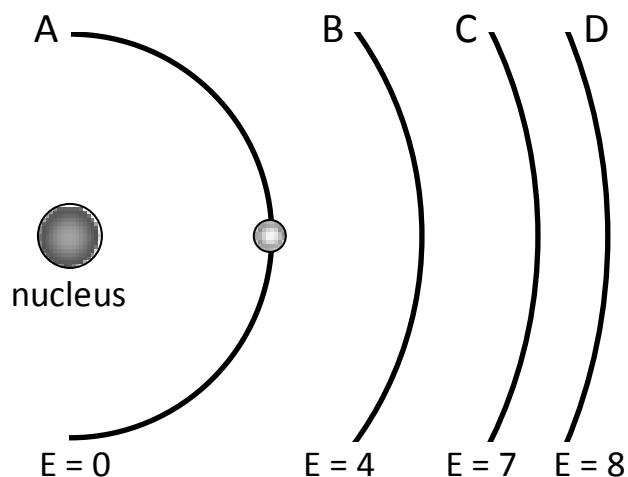


Astronomy Ranking Task: Electron Transitions

Exercise #4

Description: The figure below shows the permitted electron orbits and their associated energies inside a fictitious atom. The electron orbits are labeled with the letters A through D. The electron is shown in the ground state.



A. Ranking instructions: Rank the energies associated with the electron transitioning to each of the permitted orbits from the ground state.

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

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

Carefully explain your reasoning for ranking this way:

B. Ranking instructions: Rank the wavelengths of the photons associated with the electron transitioning to each of the permitted orbits from the ground state.

Ranking Order: Shortest 1 _____ 2 _____ 3 _____ 4 _____ 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 the electron transitioning to each of the permitted orbits from the ground state.

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