

Question:

An electron has a quantum number $n = 3$ in a Hydrogen atom, how many different frequencies of photos can it emit and how many different frequencies of photon can it absorb?

- (A) 3, Many
- (B) Many, 3
- (C) Many, 2
- (D) 2, *Many*
- (E) Many, Many

Question:

An atom has all of its subshells filled with electrons all the way to the end of shell with $n=3$. How many orbitals are there?

- (A) None
- (B) 1
- (C) 2
- (D) 3
- (E) 4

Question:

An atom has all of its subshells filled with electrons all the way to the end of shell with $n=3$. How many different states of electrons are there?

- (A) 9
- (B) 10
- (C) 18
- (D) 20
- (E) 28

Question:

For an atom with configuration $1s^2 2s^2 2p^4 3s$, which could be true?

- (A) Ground State
- (B) *Excited State*
- (C) Impossible to tell without knowing what element this is

Question:

Which one of the following transitions are allowed for photon emission?

(A) $5p \rightarrow 4p$

(B) $5p \rightarrow 4s$

(C) $4s \rightarrow 5p$

(D) A and B

(E) B and C