

Chemistry - 11th Class Chemistry Short Questions Chapter 5 Preparation

Q1. Heisenberg's uncertainty principle has no relation with Bohr's atomic model. Justify it.
Ans 1: Since the electron has wavy nature and paths are elliptical as well, so the simultaneous determination of position and momentum is not possible. But Bohr's model does not accommodate the wavy nature of electron. He says that the paths are fixed orbits and their orbits are planar. It means that Bohr's model is very simple as compared to Heisenberg's uncertainty principle.
Q2. How do you prove that the energy associated with the electron which is revolving around the nucleus of H-atom is negative?
Ans 1:
Q3. How the value of the Redberg's constant can be justified from Bohr's equation?
Ans 1:
Q4. The magnetic quantum number gives us the orientation of orbital in space. Justify it.
Ans 1: In order to designate the directions of p-orbitals in p-subshell, we need an additional quantum number and that is called magnetic quantum number. It tells us the orientation of orbital in space p-subshell has three orbital and thus have three directions in space. For each direction there is a separate value of magnetic quantum number.
Q5. State Pauli's exclusion principle and Hund's rule?
Ans 1: According to Pauli's principle "no two electrons in an atom can have the same set of four quantum numbers". According to Hund's rule, "if degenerate orbitals are available and more than two electrons are to be placed in them, then place them in separate orbitals with the same spins rather than in the same orbital with the opposite spins."
Q6. Why every series of H-spectrum is a convergent series?
Ans 1:
The lines of the every series of H-spectrum are not equally spaced. The reason is that energy levels are not equally spaced. Energy levels become close to each other from lower to the higher levels. For this reason, the lines start coming close to each other. The non-equivalent energy differences make the convergent series.
Q7. What are defects of Bohr's atomic model?
Ans 1:

Q8. How did Rutherford's model of an atom first of all proved the existence of nucleus of the atom?	
Ans 1: Rutherford observed that most of the a-particles passed straight through the gold foil without any deflection from the path. Fe deflected at some angle more than 90° and a few were deflected back on the original path. He concluded that the atom contains heavy a charged part at the center. This heavy part at the center is called nucleus.	
Q9. Why the anode rays depend upon the nature of the gas?	
Ans 1: Anode rays are those particles which are consisted of rest of the atom or molecule after the removal of one electron, the mass anode ray particle depends upon the nature of the gas, so the anode rays for all gaseous substances are different.	s of every
Q10. How the slow neutrons prove to be more effective than the fast neutrons?	
Ans 1:	