Date Planned : __ / __ / __	Daily Tutorial Sheet - 12	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level - 3	Exact Duration :_____

***142.** Which of the following statement (s) is/are correct?

(A) A photon is a positively charged nuclear particle

(B) A photon is a particle of light energy

(C) A photon is a quantum of light

(D) A photon is a bundle of energy of definite magnitude but not necessarily light energy

***143.** Rutherford's α -scattering experiment led to the following conclusions:

(A) atom has largely empty space

(B) the centre of the atom has positively charged nucleus

(C) the size of the nucleus is very small as compared to the size of the atom

(D) the electrons revolve around the nucleus

***144.** Bohr's atomic model is based on the following postulates:

(A) an atom consists of nucleus

(B) an electron can rotate only in certain energy levels

(C) an electron remains moving with continuous loss of energy

(D) an electron remains moving without continuous loss of energy

***145.** The wavelength of a spectral line for an electronic transition is inversely related to:

(A) the number of orbitals undergoing the transition

(B) the nuclear charge of an atom

(C) the difference in energy levels involved in the transition

(D) the velocity of the electron undergoing the transition

***146.** Which of the following species are expected to give line spectrum similar to that of H-atom?

(A) $He^{+}(g)$ **(B)** Li^{2+} **(C)** D(g) **(D)** Be^{3+}

***147.** Which of the following statement(s) is/are correct?

(A) Electrons in motion behave as if they are waves

(B) s-orbital is non-directional

(C) an orbital can accommodate a maximum of two electrons with parallel spins

(D) the energies of the various sub-levels in the same shell are in order s > p > d > f