HINTS & SOLUTION WORKBOOK-1

Atomic Structure

Daily Tutorial Sheet-12	Level - 3

142.(BC) (A) incorrect – photon has no charge
(B) correct – possesses light energy
(C) correct – quantum of light
(D) incorrect – bundle of definite magnitude of energy but necessarily light energy

143.(ABCD) All correct – by observations from Rutherford's α scattering experiment.

144.(ABD) (C) incorrect – electrons move in definite energy states where energy is fixed and quantised.

145. (BC) $\Delta E \propto Z^2 \quad \Rightarrow \quad \frac{hc}{\lambda} \propto Z^2 \quad \Rightarrow \quad \lambda \propto \frac{1}{Z^2}$

146.(ABCD) He^+, Li^{2+}, D, Be^{3+} (monoelectronic) all give line spectrum similar to that of H-atom.

147.(AB) C → incorrect → orbital can accommodate maximum of 2 electrons with opposite spins.
D → incorrect → energy of sub shell of same shell is of order ns < np < nd < nf