

3. An energy of 24.6 eV is required to remove one of the electrons from a neutral helium atom. The energy (in eV) required to remove both the electrons from a neutral helium atom is

(A) 79.0

(B) 51.8

(C) 49.2

(D) 38.2

Sol: (A) After the removal of first electron remaining atom will be hydrogen like atom.

So energy required to remove second electron from the atom

$$E = 13.6 \cdot \frac{2^2}{1} = 54.4 \text{ eV}$$

\ Total energy required = 24.6 + 54.4 = 79 eV .