

12. In a multi-electron atom, which of the following orbitals described by the three quantum numbers will have the same energy in the absence of magnetic and electric fields?(2005)

(a) $n = 1, l = 0, m = 0$ (b) $n = 2, l = 0, m = 0$

(c) $n = 2, l = 1, m = 1$ (d) $n = 3, l = 2, m = 1$ (e) $n = 3, l = 2, m = 0$

1) (a) and (b) 2) (b) and (c)

3) (c) and (d) 4) (d) and (e)

Ans. (4) n is same and orbital is 3d.