DPP-03

Only one correct

1. Principal, azimuthal and magnetic quantum numbers are respectively related to

(A) size, shape and orientation (B) shape, size and orientation

(C) size, orientation and shape (D) none of these

2. Degenerate atomic orbitals have

(A) equal energy (B) nearly equal energy

(C) different energy (D) none of the above

3. How many maximum electrons can be described by the quantum numbers $n = 5, \ell = 2$ in a particular atom?

(A) 2 (B) 6 (C) 10 (D) 14

4. If an electron has spin quantum number of $+\frac{1}{2}$ and magnetic quantum number of -1 , then it cannot be present in –

(A) f-orbital (B) d-orbital (C) p-orbital (D) s-orbital

5. When the quantum number n, l, m, s are represented by $3,3,2,+1/2$, the symbolism for the electron is –

(A) 3s (B) 3d

(C) 3f (D) impossible set of quantum number

6. For a 6 s electron the values of n, l, m, s respectively could be:

(A) $6,4,4,+1/2$ (B) $1,0,0,+1/2$ (C) $6,1,0,+1/2$ (D) $6,0,0,+1/2$

7. Any p-orbital can accomodate up to

(A) four electrons (B) Two electrons with parallel spin

(C) Six electrons (D) Two electrons with opposite spin

8. Which one of the following sets of quantum numbers (n, l, m, s) represents an impossible arrangement?

(A) $3,2,-2,+1/2$ (B) $4,0,0,+1/2$ (C) $3,2,-3,+1/2$ (D) $5,3,0,-1/2$

9. Which type of orbital is designated by $n = 2, \ell = 3, m_\ell = -2$?

(A) 4p (B) 4 d (C) 4f (D) None

Match the column

10. (' l ' and ' m ' are respectively the azimuthal and magnetic quantum numbers)

Column I	Column II
(A) Total number of values of (l) for a shell	(P) $0,1,2, \ldots \ldots \ldots \ldots \ldots (n-1)$
(B) Values of (l) for a shell	(Q) $+l, \ldots . +2,+1,0,-1,-2, \ldots \ldots -l$
(C) Total number of values of (m) for a subshell	(R) $(2l+1)$
(D) Values of (m) for a subshell	(S) n

ANSWER KEY

DPP-3

1. A **2.** A **3.** C **4.** D **5.** D **6.** D **7** D

8. C **9.** D **10.** (A) → S; (B) → P; (C) → R; (D) → Q