Chemistry [DPP]

Atomic Structure

DPP - 5

1. If n = 3, then which value of 'ℓ' is correct :–

(A) 0 (B) 1

(C) 2 (D) All of them

2. The four quantum numbers for the valence shell electron or last electron of sodium (Z = 11) is

(A) n = 2, ℓ = 1, m = – 1, s = $-\frac{1}{2}$

(B) n = 3, ℓ = 0, m = 0, s = $+\frac{1}{2}$

(C) n = 3, ℓ = 0, m = – 0, s = $\pm\frac{1}{2}$

(D) n = 3, ℓ = 2, m = 2, s = $+\frac{1}{2}$

3. In P-atom find out the no. of paired electrons for ℓ= 1 and m = 0 :-

(A) 3 (B) 1

(C) 2 (D) 0

4. In an atom, for how many electrons, the quantum numbers will be , $n = 3, \ell = 2, m = +2, s = +\frac{1}{2}$:-

(A) 18 (B) 6

(C) 24 (D) 1

5. For the azimuthal quantum number (ℓ), the total number of magnetic quantum number is given by:-

(A) $\ell = \frac{(m+1)}{2}$ (B) $\ell = \frac{(m-1)}{2}$

(C) $\ell = \frac{(2m+1)}{2}$ (D) $\ell = \frac{(2m-1)}{2}$

6. Four quantum numbers of unpaired electrons of chlorine are:-

	n	l	m	s
(A)	3	2	0	$+\frac{1}{2}$
(B)	3	1	0	$+\frac{1}{2}$
(C)	3	1	+1	0
(D)	3	0	−1	$+\frac{1}{2}$

7. Energy of atomic orbitals in a particular shell is in order:-
(A) s < p < d < f (B) s > p > d > f
(C) p < d < f < s (D) f > d > s > p

8. Spin angular momentum for electron:-

(A) $\sqrt{s(s+1)}\ \frac{h}{2\pi}$ (B) $\sqrt{2s(s+1)}\ \frac{h}{2\pi}$

(C) $\sqrt{s(s+2)}\ \frac{h}{2\pi}$ (D) None

9. Which statement is not correct for n = 5, m = 2 :-
(A) $\ell = 4$
(B) $\ell = 0, 1, 2, 3$; s = + 1/2
(C) $\ell = 3$
(D) $\ell = 2, 3, 4$

10. An electron is in one of 4d orbital. Which of the following orbital quantum number value is not possible :-

(A) n = 4 (B) ℓ = 1

(C) m = 1 (D) m = 2

11. A neutral atom of an element has 2K, 8L, 11 M and 2N electrons. The number of s-electron in the atom are

(A) 2 (B) 8

(C) 10 (D) 6

12. The maximum number of electrons in a p–orbital with n = 6 and m = 0 can be :-

(A) 14 (B) 6

(C) 2 (D) 10

13. If ℓ = 3 then type and number of orbital is :–

(A) 3p, 3 (B) 4f, 14

(C) 5f, 7 (D) 3d, 5

14. The total value of m for the electrons (n = 4) is -

(A) 4 (B) 8

(C) 16 (D) 32

15. An atom has 2 electrons in K–shell, 8 electrons in L–shell & 8 electrons in M–shell. The number of s–electrons presents in the element is :–

(A) 10 (B) 7

(C) 6 (D) 4

16. Any nf–orbital can accomodate upto:–
(A) 14 electron
(B) Six electrons
(C) Two electrons with parallel spin
(D) Two electrons with opposite spin

17. An electron has magnetic quantum number as -3, what is its principal quantum number :-
(A) 1 (B) 2
(C) 3 (D) 4

18. n, ℓ and m values of an electron in $3p_y$ orbital are :-
(A) n = 3 ; ℓ = 1 and m = 1
(B) n = 3 ; ℓ = 1 and m = –1
(C) Both 1 and 2 are correct
(D) None of these

19. In an atom, for how many electrons, the quantum numbers will be , $n = 3, \ell = 2, m = +2, s = +\frac{1}{2}$:-

(A) 18 (B) 6

(C) 24 (D) 1

ANSWER KEY

1.	D	**2.**	B	**3.**	C
4.	D	**5.**	B	**6.**	B
7.	A	**8.**	A	**9.**	B
10.	B	**11.**	B	**12.**	C
13.	C	**14.**	C	**15.**	C
16.	D	**17.**	D	**18.**	C
19.	D				