(Inorganic Chemistry) # General Chemistry

DPP-05

1. Consider the ground state of $Cr(Z = 24)$. The numbers of electrons with the azimuthal quantum number $l = 1$ and 2 respectively are

   (A) 16 and 4   (B) 12 and 5   (C) 12 and 4   (D) 16 and 5

2. The total number of electrons in Cr atom for which $m = 0$

   (A) 1   (B) 8   (C) 12   (D) 16

3. How many maximum possible set(s) of quantum no. are possible for 6th electron of Fe

   (A) 1   (B) 3   (C) 6   (D) 10

4. The maximum no. of electron in phosphorous atom for which $n + l + m = 3$ will be –

   (A) 6   (B) 5   (C) 4   (D) 3

5. Which of the following have maximum number of unpaired electron –

   (A) Na^+ (B) N^{3-} (C) Fe^{3+} (D) Cr^{3+}

MATCH THE COLUMN

6. Match the column:

Column – I		Column – II	
(A)	Fe^{+2}	**(P)**	Set of quantum no. for last e^- $n = 2, \ell = 1, m = 1, s = +\dfrac{1}{2}$
(B)	Mn^{+4}	**(Q)**	Magnetic moment (μ) = zero.
(C)	Zn^{+2}	**(R)**	Spin multiplicity (SM) = 4
(D)	Na^+	**(S)**	Total no. of exchange pair in 3d-subshell = 10
		(T)	Paramagnetic

Subjective

7. H-atom have infinite shells, write total number of shells which does not contain f-subshell.

8. Calculate Z_{eff} for last valence shell electron in fluorine (F).

9. In multielectronic atom, maximum number of degenerated orbitals present in 3rd shell

10. Calculate Z_{eff} for 3 s electron in vanadium(23).

ANSWER KEY

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1. B   2. C   3. C   4. B   5. C

6. $A \to S, T; B \to R, T; C \to Q; D \to P, Q$

7. 3   8. $\sigma = 3.8\ Z_{eff} = 5.2$

9. 5   10. $\sigma = 11.25\ Z_{eff} = 11.75$