Q1 JEE Main 2020 - 2 September (Evening)

The oxidation states of transition metal atoms in $\mathrm{K_2Cr_2O_7}$, $\mathrm{KMnO_4}$ and $\mathrm{K_2FeO_4}$, respectively, are x, y and z. The sum of x, y and z is

Q2 JEE Main 2020 - 3 September (Evening)

The incorrect statement is

(A) Manganate and permanganate ions are paramagnetic
(B) Manganate and permanganate ions are tetrahedral
(C) Manganate ion is green in colour and permanganate ion is purple in colour
(D) In manganate and permanganate ions, the π -bonding takes place by overlap of p-orbitals of oxygen and d-orbitals of manganese

Q3 JEE Main 2020 - 4 September (Evening)

The incorrect statement(s) among (a) - (c) is (are)
(a) $\mathrm{W(VI)}$ is more stable than $\mathrm{Cr(VI)}$.
(b) In the presence of HCl, permanganate titrations provide satisfactory results.
(c) Some lanthanoid oxides can be used as phosphors.

(A) (a) and (b) only
(B) (a) only
(C) (b) and (c) only
(D) (b) only

Q4 JEE Main 2020 - 5 September (Morning)

The correct electronic configuration and spinonly magnetic moment (BM) of $\mathrm{Gd^{3+}(Z=64)}$ respectively, are

(A) $\mathrm{[Xe]5f^7}$ and 8.9
(B) $\mathrm{[Xe]4f^7}$ and 7.9
(C) $\mathrm{[Xe]5f^7}$ and 7.9
(D) $\mathrm{[Xe]4f^7}$ and 8.9

Q5 JEE Main 2020 - 6 September (Morning)

The lanthanoid that does NOT show + 4 oxidation state is

(A) Tb
(B) Dy
(C) Ce
(D) Eu

Q6 JEE Main 2020 - 6 September (Evening)

Mischmetal is an alloy consisting mainly of

(A) lanthanoid and actinoid metals
(B) actinoid and transition metals
(C) lanthanoid metals
(D) actinoid metals

Q7 JEE Main 2020 - 9 January (Morning)

The electronic configurations of bivalent europium and trivalent cerium are :
(atomic number : $Xe = 54,\ Ce = 58,\ Eu = 63$)

(A) $[Xe]\,4f^7,\ [Xe]\,4f^1$
(B) $[Xe]\,4f^7 6s^2,\ [Xe]\,4f^1$
(C) $[Xe]\,4f^7 6s^2,\ [Xe]\,4f^1 5d^1 6s^2$
(D) $[Xe]\,4f^7,\ [Xe]\,4f^1 5d^1 6s^2$

Q8 JEE Main 2020 - 9 January (Evening)

The sum of the total number of bonds between chromium and oxygen atoms in chromate and dichromate ions is

Answer Key

Q1 (19) **Q2** (A) **Q3** (D) **Q4** (B)

Q5 (D) **Q6** (C) **Q7** (A) **Q8** (12)