

Topic :- THE D-AND F-BLOCK ELEMENTS

- 1 (b)
Ag salts on strong heating form Ag.
- 2 (b)
Mond's process involves extraction of Ni.
$$\text{Ni} + 4\text{CO} \xrightarrow{335\text{K}} \text{Ni}(\text{CO})_4 \text{ (Volatile);}$$
$$\text{Ni}(\text{CO})_4 \xrightarrow{450\text{K}} \text{Ni} + 4\text{CO}$$
- 3 (c)
$$2\text{Fe}_2(\text{SO}_4)_3 + 3\text{K}_4[\text{Fe}(\text{CN})_6] \rightarrow \text{Fe}_4[\text{Fe}(\text{CN})_6]_3 + 6\text{K}_2\text{SO}_4.$$

(Prussian blue)
- 4 (c)
German silver is an alloy of copper, zinc and nickel. It is used in utensils and resistance wire.
- 5 (b)
Due to the formation of $\text{CuCO}_3 \cdot \text{Cu}(\text{OH})_2$; green
- 6 (b)
It is a reason for the given fact.
- 7 (a)
 FeSO_4 is mostly used in manufacture of blue-black ink, as a mordant in dyeing and tanning industries.
- 8 (c)
It is a trade name for $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$.
- 9 (a)
The elements having incomplete *d*-orbital can show variable oxidation state (because the electrons move the two levels of *d* itself)
 \therefore Zn has completely filled *d*-orbital.
 \therefore It does not show variable oxidation state. It always show +2 oxidation state.
- 11 (b)
It is a fact.
- 12 (b)
$$\text{Ag}_2\text{O} \xrightarrow{\Delta} 2\text{Ag} + \frac{1}{2}\text{O}_2$$

- 13 **(a)**
Calamine (ZnCO_3) is an ore of zinc.
- 14 **(b)**
Haematite (Fe_2O_3) having FeO is first oxidized to Fe_2O_3 and then reduced to Fe by Co.
- 15 **(b)**
 MnO_2 forms amphoteric oxide due to intermediate oxidation state
- 16 **(d)**
Ir does not dissolve in aqua regia as it is much more noble than Au and Pt
- 17 **(d)**
Hg has +1 oxidation state in Hg_2Cl_2 .
- 18 **(b)**
 $[\text{Co}(\text{NH}_3)_5\text{Cl}]\text{Cl}_2$ ionizes to $[\text{Co}(\text{NH}_3)_5\text{Cl}]^{2+}$ and Cl^- . These 2Cl^- react with Ag^+ to form white ppt. of AgCl.
- 19 **(d)**
All are facts.
- 20 **(a)**
 $\text{K}_2\text{Cr}_2\text{O}_7 + \text{H}_2\text{SO}_4 + 4\text{H}_2\text{O}_2 \rightarrow \text{K}_2\text{SO}_4 + 2\text{CrO}_5 + 5\text{H}_2\text{O}$

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| ANSWER-KEY | | | | | | | | | | |
|------------|----|----|----|----|----|----|----|----|----|----|
| Q. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| A. | B | B | C | C | B | B | A | C | A | C |
| | | | | | | | | | | |
| Q. | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| A. | B | B | A | B | B | D | D | B | D | A |
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