

Binary Ionic - Multi-Valent

PI17 # 11, 12

- 11. a) vanadium (IV) b) nickel (III)

- c) gold (I) d) titanium (IV)

- 12. a) $\text{Ni}^{3+} \text{Cl}^{-}$ NiCl_3

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- b) $\text{Pb}^{4+} \text{S}^{2-}$ $\text{Pb}_2\text{S}_4 \rightarrow \text{PbS}_2$

- c) $\text{Cu}^{+} \text{O}^{2-}$ Cu_2O
- d) $\text{Cu}^{2+} \text{O}^{2-}$ CuO

PI17 # 4, 5

- 14. a) cobalt (III) oxide b) manganese (IV) sulphide

- c) copper (II) chloride d) copper (I) chloride

5. REMEMBER "MULTI-VALENT"

- a) ~~Fe^{2+}~~ Fe^{3+} Fe_2O_3

iron (II) oxide

- d) ~~Sn^{2+}~~ Sn^{4+} SnO_2

tin (II) nitride

- g) ~~Pb^{2+}~~ Pb^{4+} PbF_4

lead (IV) fluoride

- b) ~~Cu^{2+}~~ Cu^{+} Cu_2S

copper (II) nitride

- e) ~~Ni^{2+}~~ Ni^{3+} Ni_2S_3

nickel (III) sulphide

- h) ~~Ti^{2+}~~ Ti^{4+} TiS_2

titanium (IV) sulphide

- e) ~~Sn^{2+}~~ Sn^{4+} SnS_2

tin (II) sulphide

- f) ~~Ni^{2+}~~ Ni^{3+} Ni_2S_3

nickel (III) sulphide