

## Esercitazioni Numeriche e di Laboratorio di Chimica di Base

### Soluzioni Esercizi Capitolo 2

- 2.1 R = 22.0 g  
2.2 R = 9.260 g  
2.3 R = 5.76 g  
2.4 R = 71.45 g  
2.5 R = 83.4 g  
2.6 R = 95.0 %  
2.7 R = 15.1 g  
2.8 Correggere nel testo la quantità di HNO<sub>3</sub> è di **19.0 g** invece che di 9.00 g. R = 90.1%  
2.9 Correggere nel testo la formula **FeS<sub>2</sub>** con **Fe<sub>2</sub>S<sub>3</sub>** R = % di Fe<sub>2</sub>S<sub>3</sub> = 93.96 %; % di FeS = 6.04 %  
2.9 R = Sn 22.70%; Pb 77.30%  
2.10 R = 28.4%  
2.11 Reazioni bilanciate:  
a.  $2 \text{AgNO}_3 + \text{NaSH} + \text{NaOH} \rightarrow \text{Ag}_2\text{S} + 2 \text{NaNO}_3 + \text{H}_2\text{O}$   
b.  $\text{K}_3\text{AsO}_4 + 4 \text{H}_2\text{S} \rightarrow \text{K}_3\text{AsS}_4 + 4 \text{H}_2\text{O}$   
c.  $\text{Fe}^{3+} + 3 \text{NH}_3 + 3 \text{H}_2\text{O} \rightarrow 3 \text{NH}_4^+ + \text{Fe}(\text{OH})_3$   
d.  $\text{As}_2\text{O}_3 + 6 \text{Zn} + 6 \text{H}_2\text{SO}_4 \rightarrow 2 \text{AsH}_3 + 6 \text{ZnSO}_4 + 3 \text{H}_2\text{O}$   
e.  $2 \text{KBr} + \text{H}_2\text{SO}_4 \rightarrow \text{Br}_2 + \text{K}_2\text{SO}_3 + \text{H}_2\text{O}$   
f.  $\text{C}_3\text{H}_8 + 5 \text{O}_2 \rightarrow 3 \text{CO}_2 + 4 \text{H}_2\text{O}$   
g.  $8 \text{Al} + 3 \text{HNO}_3 + 27 \text{H}^+ \rightarrow 8 \text{Al}^{3+} + 3 \text{NH}_4^+ + 9 \text{H}_2\text{O}$   
h.  $2 \text{CrO}_4^{2-} + 3 \text{H}_2\text{O}_2 + 2 \text{OH}^- \rightarrow 2 \text{CrO}_4^{2-} + 4 \text{H}_2\text{O}$   
i.  $6 \text{Br}_2 + 12 \text{OH}^- \rightarrow 10 \text{Br}^- + 2 \text{BrO}_3^- + 6 \text{H}_2\text{O}$   
j.  $6 \text{I}^- + \text{Cr}_2\text{O}_7^{2-} + 14 \text{H}^+ \rightarrow 2 \text{Cr}^{3+} + 3 \text{I}_2 + 7 \text{H}_2\text{O}$   
k.  $3 \text{Cu} + 2 \text{HNO}_3 + 3 \text{H}_2\text{SO}_4 \rightarrow 3 \text{CuSO}_4 + 2 \text{NO} + 4 \text{H}_2\text{O}$   
l.  $6 \text{Cl}_2 + 12 \text{NaOH} \rightarrow 10 \text{NaCl} + 2 \text{NaClO}_3 + 6 \text{H}_2\text{O}$   
m.  $3 \text{Fe}(\text{CN})_6^{3-} + \text{CrO}_2^- + 4 \text{OH}^- \rightarrow 3 \text{Fe}(\text{CN})_6^{4-} + \text{CrO}_4^{2-} + 2 \text{H}_2\text{O}$   
n.  $2 \text{Bi}^{3+} + 3 \text{SnO}_2^{2-} + 6 \text{OH}^- \rightarrow 2 \text{Bi} + 3 \text{SnO}_3^{2-} + 3 \text{H}_2\text{O}$   
o.  $6 \text{MnO}_4^- + \text{I}^- + 6 \text{OH}^- \rightarrow \text{IO}_3^- + 6 \text{MnO}_4^{2-} + 3 \text{H}_2\text{O}$   
2.12 R = 51.9 g  
2.13 R = 1.53 g  
2.14 R = 22.8 g