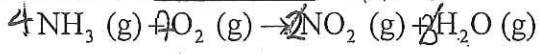


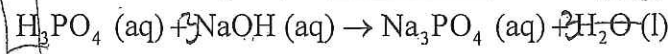
1) When the following equation is balanced, the coefficients are _____



- A) 1, 1, 1, 1
- B) 4, 3, 2, 3**
- C) 2, 3, 2, 3
- D) 1, 3, 1, 2
- E) 4, 3, 4, 3

Handwritten notes:
 $4 \times N = 4$
 $12 \times H = 12$
 $14 \times O = 14$
 $8 + 6$

2) When the following equation is balanced, the coefficient of H_3PO_4 is _____



- A) 1
- B) 2
- C) 3
- D) 4**
- E) 0

Handwritten notes:
 $3 \text{ H } 1 = 3$
 $1 \text{ PO}_4 1 = 1$
 $1 \text{ Na } 3 = 3$
 $1 \text{ OH } 1 = 1$

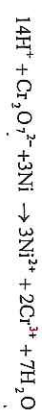
3) Of the reactions below, which one is not a combination reaction?

- ~~A) $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$~~
- ~~B) $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$~~
- ~~C) $2\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3$~~
- ~~D) $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2$~~
- E) $2\text{CH}_4 + 4\text{O}_2 \rightarrow 2\text{CO}_2 + 4\text{H}_2\text{O}$**

4) Which of the following are combination reactions?

- 1) $\text{CH}_4(\text{g}) + \text{O}_2(\text{g}) \rightarrow \text{CO}_2(\text{g}) + \text{H}_2\text{O}(\text{l})$
 - 2) $\text{CaO}(\text{s}) + \text{CO}_2(\text{g}) \rightarrow \text{CaCO}_3(\text{s})$
 - 3) $\text{Mg}(\text{s}) + \text{O}_2(\text{g}) \rightarrow \text{MgO}(\text{s})$
 - 4) $\text{PbCO}_3(\text{s}) \rightarrow \text{PbO}(\text{s}) + \text{CO}_2(\text{g})$
- A) 1, 2, and 3
B) 2 and 3
 C) 1, 2, 3, and 4
 D) 4 only
 E) 2, 3, and 4

4) Which substance is serving as the reducing agent in the following reaction?



- A) Ni
- B) H^+
- C) $\text{Cr}_2\text{O}_7^{2-}$**
- D) H_2O
- E) Ni^{2+}

3) Which of the following reactions is a redox reaction?

- (a) $\text{K}_2\text{CrO}_4 + \text{BaCl}_2 \rightarrow \text{BaCrO}_4 + 2\text{KCl}$
- (b) $\text{Pb}^{2+} + 2\text{Br}^- \rightarrow \text{PbBr}_2$
- (c) $\text{Cu} + \text{S} \rightarrow \text{CuS}$

- A) (a) only**
- B) (b) only
- C) (c) only
- D) (a) and (c)
- E) (b) and (c)

2) What is the oxidation number of potassium in KMnO_4 ?

- A) 0
- B) +1
- C) +2
- D) -1
- E) +3**

1) The gain of electrons by an element is called _____

- A) reduction**
- B) oxidation
- C) disproportionation
- D) fractionation
- E) sublimation

Handwritten: Ann Drake