Complete the following reactions. Circle the most favored products.

$$3. \quad \stackrel{\text{CI}}{\longrightarrow} \quad \frac{500 \, \text{K}}{\Delta}$$

$$^{4.}$$
  $^{+}$  KMnO<sub>4</sub> + H<sub>2</sub>O  $\longrightarrow$ 

11. 
$$CI \qquad \frac{500 \text{ K}}{\Delta}$$

12. 
$$+ H_2(g) \rightarrow$$

13. 
$$+ H_2O \rightarrow$$

14. 
$$+ H_2O \rightarrow$$

15. 
$$\rightarrow$$
 + H<sub>2</sub>O  $\rightarrow$ 

16. 
$$+ H_2(g) \rightarrow$$

$$19. \ \ + \ \ \mathrm{H_2}\left(\mathrm{g}\right) \ \ \longrightarrow$$

21. 
$$+ H_2O \rightarrow$$

$$22.$$
 + HCl  $\rightarrow$ 

23. 
$$+ \text{ KMnO}_4 + \text{H}_2\text{O} \rightarrow$$

25. 
$$+ \text{ KMnO}_4 + \text{H}_2\text{O} \longrightarrow$$

Question 4: 
$$OH \rightarrow MnO_2 \rightarrow KOH$$

Question 5: 
$$_{-}$$
CO $_{2}$ (g) +  $_{-}$ H $_{2}$ O(g) + Heat Balance:  $(2,7,4,6)$ 

Question 6: 
$$CO_2$$
 (g) +  $H_2O$  (g) + Heat Balance:  $(1,3,2,2)$ 

Question 8: 
$$+ H_2(g)$$

Question 9: 
$$\__{CO_2}(g) + \__{H_2O}(g) + Heat$$
 Balance:  $(1,5,3,4)$ 

Question 13: 
$$H_2(g)$$
 + OH + OH OH

Question 14: 
$$H_2(g)$$
 + OH + OH

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Question 16:

Question 17:  $_{--}$  co<sub>2</sub> (g) +  $_{--}$  H<sub>2</sub>O (g) + Heat Balance: (2,9,6,6)

Question 18: + HCI

Question 19: <

Question 20:  $_{-}$ co<sub>2</sub> (g) +  $_{-}$  H<sub>2</sub>O (g) + Heat Balance: (2,11,8,6)

Question 21:  $H_2(g)$  + OH + OH OH

Question 22:  $H_2(g)$  + Ci + Ci

Question 23:  $OH + MnO_2 + KOH$ 

Question 24: + H<sub>2</sub> (g)

Question 25:  $+ \text{MnO}_2$  + KOH