

★启用前注意

2021



学



模

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、 : 16 , 44 。 1~10 , 2 ; 11~16 , 4 。

	1	2	3	4	5	6	7	8	9	10
	B	D	C	C	A	A	C	C	A	D
	11	12	13	14	15	16				
	D	B	C	B	D	D				

、 : 56 。 17~19 , 20~21 。

17. (14)

- (1) ① $\text{MnO}_2 + \text{SO}_2 \rightleftharpoons \text{MnSO}_4$ (2)
 ② SO_2 (1)
 ③ SO_2 (1)
- (2) ① 化 Fe^{2+} SO_2 (2)
 ② Fe^{3+} (1)
- (3) ① $\text{Mn}^{2+} + 2\text{HCO}_3^- \rightleftharpoons \text{MnCO}_3 \downarrow + \text{CO}_2 \uparrow + \text{H}_2\text{O}$ (2)
 ② NH_4HCO_3 (1)
- (4) 化 (2)
- (5) 81.8% (81.7%) (2)

18. (16)

- (1) (2) () (1)
- (2) (1)
- (3) H^+ (1) +6 (2)
- (4) $2\text{H}^+ + [\text{WO}_3\text{C}_2\text{O}_4\text{H}_2\text{O}]^{2-} \xrightarrow{\Delta} \text{H}_2\text{WO}_4 \downarrow + \text{H}_2\text{C}_2\text{O}_4$ (2)
 $\text{H}_2\text{WO}_4 \rightleftharpoons \text{WO}_3 + \text{H}_2\text{O}$ (2)
- (5) $\text{H}_2\text{C}_2\text{O}_4$ (2)
- (6) $\text{CaSO}_4 + \text{H}_2\text{C}_2\text{O}_4 \rightleftharpoons \text{CaC}_2\text{O}_4 + 2\text{H}^+ + \text{SO}_4^{2-}$,
 $K = \frac{K_{a1}(\text{H}_2\text{C}_2\text{O}_4) \times K_{a2}(\text{H}_2\text{C}_2\text{O}_4) \times K_{sp}(\text{CaSO}_4)}{K_{sp}(\text{CaC}_2\text{O}_4)} \approx 1.9 \times 10^{-1}$ (1) ,

$$Q_c = \frac{c^2(\text{H}^+) \times c(\text{SO}_4^{2-})}{c(\text{H}_2\text{C}_2\text{O}_4)} = \frac{2.0^2 \times 1.0}{0.5} = 8 > K (1 \quad), \quad \text{“ ” } ,$$

, CaSO_4 CaC_2O_4 (1) 3

19. (12)

(1) ~~-4~~ (2)

(2) $:\ddot{\text{Cl}}:\ddot{\text{S}}:\ddot{\text{S}}:\ddot{\text{Cl}}:$ (1) $2\text{S}_2\text{Cl}_2 + 2\text{H}_2\text{O} \rightleftharpoons 3\text{S} \downarrow + \text{SO}_2 \uparrow + 4\text{HCl}$ (2)

(3) ①B、D (2) $250 \text{ }^\circ\text{C}$, B、D ,
(2)

②C (1)

③

c