Multiple Choice

Identify the choice that best completes the statement or answers the question.

 1.	What are the oxidation and reduction half-reactions for the redox reaction of $Fe + F_2 \longrightarrow FeF_3$?				
	a. Fe \longrightarrow Fe ³⁺ + 3e ⁻ , F ₂ + 2e ⁻ \longrightarrow 2F ⁻				
	b. $Fe + 3e^- \longrightarrow Fe^{3+}, F_2 + 2e^- \longrightarrow 2F$				
	^{c.} $F_2 + 2e^- \longrightarrow 2F^-, Fe + 3e^- \longrightarrow Fe^{3+}$				
	d. $F_2 + 2e^- \longrightarrow 2F^-$, $Fe \longrightarrow Fe^{3+} + 3e^-$				
2	In the equation $Al + Cl_2 \rightarrow AlCl_2$ the oxidation number of Cl changes from to				
 	a1, 0 c. 0, 3+				
	b. 3+, 0 d. 0, 1-				
 3.	In the equation $Al + Cl_2 \rightarrow AlCl_3$, the oxidation number of Al changes from to				
	a. $3+, 0$ c. $-1, 0$ b. $0, 3+$ d. $0, 1$				
4	u. v , r -				
 ч.	a. reduction c. redox				
	b. combination d. oxidation				
 5.	Is the following reaction a redox reaction? $H_2SO_4 + 2NaOH \rightarrow Na_2SO_4 + 2H_2O$				
	a. It is impossible to determine. c. if energy is added				
6	D. yes d. 110				
 0.	a. hydrogen c. oxygen				
	b. a metal d. a reduction reaction				
 7.	For every oxidation reaction that occurs, a reaction must also take place.				
	a. synthesis c. combustion				
0	b. decomposition d . reduction				
 0.	a. Fe ₂ O ₃ c , Al				
	b. Fe d. Al_2O_3				
 9.	When silver reacts with sulfur to form tarnish, what element is the oxidizing agent?				
	a. S c. Ag^+				
10	D. Ag C. S				
 10.	a. respiration c. corrosion				
	b. photosynthesis d. bioluminescence				
 11.	Chemiluminescent reactions release				
	a. odors c. light				
10	b. heat d. gases $D_{1}^{2} = \frac{1}{2} \frac{1}{2}$				
 12.	2. When iron is obtained from iron ore according to the equation $2Fe^{3\tau} + 3O^{2\tau} + 3CO \rightarrow 2Fe + 3CO_2$, what is the reducing agent?				
	a. Fe^{3+} c. Fe				
	b. C^{2+} d. O^{2-}				

 13.	During respiration, what element is reduced?				
	a. magnesium	c.	carbon		
	b. hydrogen	d.	oxygen		
 14.	14. Identify the oxidation half-reactions for the redox reaction of 2 Silver(s) + Chlorine(g) — chloride.				
	a. Silver + electron \longrightarrow Silver ion				
	b. Silver ion $+ 2$ electron \longrightarrow Silver				
	c. Silver \longrightarrow Silver ion + electron				
	d. Silver + 2 electron \longrightarrow Silver ion				
 15.	In a redox reaction, the reducing agent is				
	a. reduced	c.	oxidized		
	b. redoxed	d.	also the oxidizing agent		
 16.	When an element is reduced, its oxidation num	ber	:		
	a. may increase or decrease	c.	stays the same		
	b. increases	d.	decreases		
 17.	7. How do mammals keep from freezing during the winter?				
	a. hibernation	c.	combustion		
	b. oxidation of fats stored in the body	d.	chemiluminescence		
 18.	Reduction is a(n)				
	a. agent	c.	redox reaction		
	b. half-reaction	d.	loss of electrons		
 19.	A silver vase exposed to the air for a long time is most likely to have an outer coating of				
	a. silver metal	c.	silver sulfide		
	b. silver oxide	d.	hydrogen sulfide		
 20.	Electrons gained and lost during a redox reaction	on c	an be determined by examining the of the elements		
	involved.				
	a. formulas	c.	symbols		
	b. coefficients	d.	oxidation number		

Matching

Match each item with the correct item below.

- a. oxidizing agent
- b. reducing agent
- c. both
- _____ 21. Ca²⁺
- _____ 22. H₂
- _____ 23. S²⁻
- ____ 24. Cl⁻
- ____ 25. K⁺
- _____ 26. I₂
- $27. \ Cr^{3+}$
- _____ 28. Na
- _____ 29. O₂
- _____ 30. Cu⁺
- _____ 31. F₂
- _____ 32. O₂²⁻
- _____ 33. CO
- _____ 34. SO₂
- _____ 35. Fe³⁺
