



**Assessment****Chapter 9****BLM 9-8****Chapter 9 Test** (continued)

15. Both  $\text{NH}_4\text{Cl}$  and  $\text{KCl}$  are white solids. How could you distinguish between them?
- (a) dissolve them in water  
(b) do a colour analysis using a spectrophotometer  
(c) burn them in a Bunsen burner flame  
(d) dissolve them in a nonpolar solvent
16. Water is a good solvent for many salts because
- (a) it is mobile and easily evaporates  
(b) it loosens the bonds between the ions  
(c) it has a specific gravity of 1 g per  $\text{cm}^3$   
(d) it is a poor conductor of electricity
17. Which of the following methods is not suitable for softening water?
- (a) distillation (b) ion exchange  
(c) addition of slaked lime (d) addition of sodium carbonate
18. Which of the following substances is the least suitable as a filter for muddy water?
- (a) salt (b) sand (c) gravel (d) charcoal
19. Which of the following substances is the least soluble in water?
- (a)  $\text{Li}_2\text{CO}_3$  (b)  $\text{KCl}$  (c)  $\text{NaHCO}_3$  (d)  $\text{AgCl}$
20. The net-ionic equation for the reaction between lead(II) nitrate solution and potassium chloride solution is
- (a)  $\text{Pb}_{(s)} + 2\text{Cl}^-_{(g)} \rightarrow \text{PbCl}_{2(s)}$   
(b)  $\text{Pb}^+_{(aq)} + \text{Cl}^-_{(aq)} \rightarrow \text{PbCl}_{(s)}$   
(c)  $\text{Pb}^+_{(aq)} + 2\text{Cl}^-_{(aq)} \rightarrow \text{PbCl}^-_{2(s)}$   
(d)  $\text{Pb}^{2+}_{(aq)} + 2\text{Cl}^-_{(aq)} \rightarrow \text{PbCl}_{2(s)}$
21. The ions formed when magnesium bromide dissolves in water are
- (a)  $\text{Mg}^{2+}$ ,  $2\text{Br}^-$  (b)  $\text{Mg}^{2+}$ ,  $\text{Br}^{2-}$  (c)  $\text{Mg}^+$ ,  $\text{Br}^{2-}$  (d)  $\text{Mg}^+$ ,  $\text{Br}^-$
22. Which of the following would most likely be found in a bathtub ring?
- (a) sodium stearate (b) magnesium stearate  
(c) potassium stearate (d) sodium chloride
23. What volume of 6.00 mol/L nitric acid solution is needed to make 4.2 L of 0.15 mol/L nitric acid solution?
- (a) 1.05 L (b) 168 mL (c) 105 mL (d) 214 mL

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24. The mass of solid lead(II) nitrate required to prepare 125 mL of a 0.4 mol/L solution of lead(II) nitrate is  
(a) 13.5 g      (b) 16.6 g      (c) 41.4 g      (d) 331 g
25. The volume of water to be added to dilute 2.0 L of 0.50 mol/L HCl solution to a concentration of 0.33 mol/L is  
(a) 0.66 L      (b) 1.3 L      (c) 1.0 L      (d) 3.3 L
26. The substance not soluble in water is  
(a)  $\text{Na}_2\text{SO}_4$       (b) HCl      (c)  $\text{NH}_4\text{Cl}$       (d)  $\text{Fe}_2\text{O}_3$
27. The substance which is ionic in nature is  
(a)  $\text{N}_2\text{O}_3$       (b)  $\text{CH}_2\text{CH}_2$       (c)  $\text{CO}_2$       (d)  $\text{NH}_4\text{Cl}$
28. 9.53 g of  $\text{MgCl}_2$  are dissolved in 1.00 L of solution. The concentration of chloride ions is  
(a) 0.200 mol/L      (b) 0.100 mol/L      (c) 0.0500 mol/L      (d) 1.00 mol/L
29. The name of  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$  is  
(a) Iron sulfate waterated      (b) Iron sulfate seven waters  
(c) Iron sulfate heptahydrate      (d) Iron(II) sulfate heptahydrate
30. 50 mL of 2.0 M hydrochloric acid required 100 mL of sodium hydroxide solution for complete neutralization. The concentration of the sodium hydroxide solution was  
(a) 0.25 mol/L      (b) 0.50 mol/L      (c) 1.0 mol/L      (d) 2.0 mol/L