

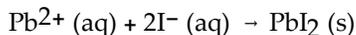
Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) A strong electrolyte is one that _____ completely in solution. 1) _____
A) reacts B) ionizes C) disappears D) associates
- 2) A weak electrolyte exists predominantly as _____ in solution. 2) _____
A) an isotope B) molecules C) ions D) electrons E) atoms
- 3) Which of the following are strong electrolytes? 3) _____
HCl
HC₂H₃O₂
NH₃
KCl
A) HCl, KCl
B) HCl, HC₂H₃O₂, NH₃, KCl
C) HCl, NH₃, KCl
D) HC₂H₃O₂, KCl
E) HCl, HC₂H₃O₂, KCl
- 4) How many moles of Co²⁺ are present in 0.200 L of a 0.400 M solution of CoI₂? 4) _____
A) 0.500 B) 0.0400 C) 0.160 D) 0.0800 E) 2.00
- 5) What are the respective concentrations (M) of Na⁺ and SO₄²⁻ afforded by dissolving 0.500 mol Na₂SO₄ in water and diluting to 1.33 L? 5) _____
A) 0.665 and 1.33
B) 1.33 and 0.665
C) 0.665 and 0.665
D) 0.752 and 0.376
E) 0.376 and 0.752
- 6) What is the concentration (M) of a NaCl solution prepared by dissolving 9.3 g of NaCl in sufficient water to give 350 mL of solution? 6) _____
A) 27 B) 0.16 C) 2.7×10^{-2} D) 18 E) 0.45
- 7) Which of these metals is the most easily oxidized? 7) _____
Na
Au
Fe
Ca
Ag
A) Ag B) Na C) Au D) Ca E) Fe

- 8) A neutralization reaction between an acid and a metal hydroxide produces _____. 8) _____
A) hydrogen gas
B) ammonia
C) sodium hydroxide
D) water and a salt
E) oxygen gas
- 9) The spectator ions in the reaction between aqueous perchloric acid and aqueous barium hydroxide are _____. 9) _____
A) H^+ and Ba^{2+}
B) H^+ and OH^-
C) H^+ , OH^- , ClO_4^- , and Ba^{2+}
D) OH^- and ClO_4^-
E) ClO_4^- and Ba^{2+}
- 10) Combining aqueous solutions of BaI_2 and Na_2SO_4 affords a precipitate of BaSO_4 . Which ion(s) is/are spectator ions in the reaction? 10) _____
A) Na^+ and I^-
B) Ba^{2+} only
C) Ba^{2+} and SO_4^{2-}
D) SO_4^{2-} and I^-
E) Na^+ only
- 11) What are the spectator ions in the reaction between KCl (aq) and AgNO_3 (aq)? 11) _____
A) K^+ and NO_3^-
B) Ag^+ and Cl^-
C) K^+ only
D) Ag^+ and NO_3^-
E) K^+ and Ag^+
- 12) The concentration (M) of an aqueous methanol produced when 0.200 L of a 2.00 M solution was diluted to 0.800 L is _____. 12) _____
A) 0.200 B) 8.00 C) 0.500 D) 0.800 E) 0.400
- 13) The molarity (M) of an aqueous solution containing 52.5 g of sucrose ($\text{C}_{12}\text{H}_{22}\text{O}_{11}$) in 35.5 mL of solution is _____. 13) _____
A) 5.46 B) 1.48 C) 1.85 D) 4.32 E) 0.104
- 14) The molarity of a solution prepared by diluting 43.72 mL of 5.005 M aqueous $\text{K}_2\text{Cr}_2\text{O}_7$ to 500. mL is _____. 14) _____
A) 0.870 B) 0.0044 C) 57.2 D) 0.438 E) 0.0879

15) Lead ions can be precipitated from aqueous solutions by the addition of aqueous iodide: 15) _____



Lead iodide is virtually insoluble in water so that the reaction appears to go to completion. How many milliliters of 3.550 M HI(aq) must be added to a solution containing 0.700 mol of $\text{Pb}(\text{NO}_3)_2$ (aq) to completely precipitate the lead?

- A) 394
- B) 2.54×10^{-3}
- C) 197
- D) 0.394
- E) 0.197

16) The concentration of iodide ions in a 0.193 M solution of barium iodide is _____. 16) _____
A) 0.0965 M B) 0.579 M C) 0.386 M D) 0.0643 M E) 0.193 M

17) A solution is prepared by mixing 50.0 mL of 0.100 M HCl and 10.0 mL of 0.200 M NaCl. What is the molarity of chloride ion in this solution? 17) _____
A) 8.57 B) 0.183 C) 3.50 D) 0.117 E) 0.0500

18) Pure acetic acid ($\text{HC}_2\text{H}_3\text{O}_2$) is a liquid and is known as glacial acetic acid. Calculate the molarity of a solution prepared by dissolving 10.00 mL of glacial acetic acid at 25 °C in sufficient water to give 500.0 mL of solution. The density of glacial acetic acid at 25 °C is 1.05 g/mL. 18) _____
A) 0.0210
B) 1.26×10^3
C) 3.50×10^{-4}
D) 21.0
E) 0.350

19) How many grams of H_3PO_4 are in 175 mL of a 2.50 M solution of H_3PO_4 ? 19) _____
A) 20.0 B) 42.9 C) 612 D) 0.438 E) 4.90

20) How many grams of NaOH (MW = 40.0) are there in 500.0 mL of a 0.225 M NaOH solution? 20) _____
A) 114 B) 14.0 C) 4.50 D) 0.00219 E) 0.113

Answer Key

Testname: UNTITLED1

- 1) B
- 2) B
- 3) A
- 4) D
- 5) D
- 6) E
- 7) D
- 8) D
- 9) E
- 10) A
- 11) A
- 12) C
- 13) D
- 14) D
- 15) A
- 16) C
- 17) D
- 18) E
- 19) B
- 20) C