

Solubility Practice

Name: _____

Date: _____

- Which substance dissolves in pure water and produces a solution that is a good conductor of electricity?
 - CaCl_2
 - $\text{C}_6\text{H}_{12}\text{O}_6$
 - N_2
 - O_2

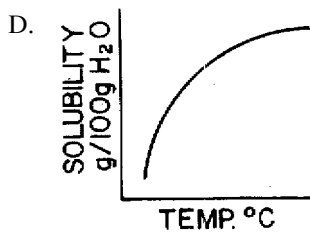
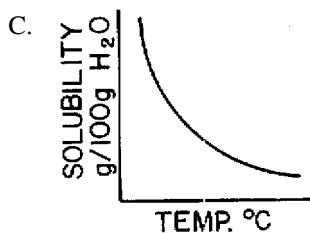
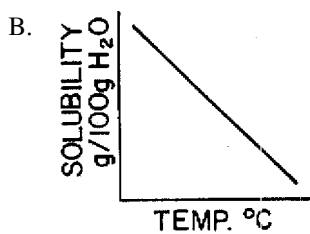
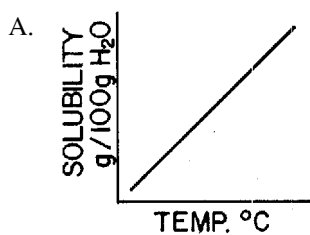
- Which substance functions as the electrolyte in an automobile battery?
 - PbO_2
 - PbSO_4
 - H_2SO_4
 - H_2O

- Which compound decreases in solubility as the temperature of the solution is increased from 10°C to 50°C ?
 - NH_4Cl
 - NaCl
 - NH_3
 - NaNO_3

- The following data were recorded while determining the solubility of a certain salt.

Temp. ($^\circ\text{C}$)	10	20	30	40	50
Grams Solute/ 100 g H_2O	30	33	36	39	42

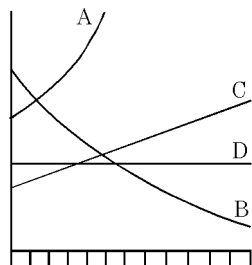
Which graph best represents the solubility of this salt?



- What is the maximum number of grams of NH_4Cl that will dissolve in 200 grams of water at 70°C ?
 - 60
 - 70
 - 100
 - 120

6. What is the total number of grams of potassium chloride needed to saturate exactly 300 grams of water at 10°C ?
- A. 60 B. 70 C. 80 D. 90
7. The solubility of a salt in a given volume of water depends primarily on the
- A. surface area of the salt crystals
 B. temperature of the water
 C. rate at which the salt and water are stirred
 D. pressure on the surface of the water
8. Which compound shows the *least* increase in solubility in water from 50°C to 60°C ?
- A. KCl B. NaCl
 C. KNO_3 D. NaNO_3
9. A solution containing 55 grams of NH_4Cl in 100 grams of water is saturated at a temperature of
- A. 47°C B. 57°C C. 67°C D. 77°C
10. Which quantity of salt will form a saturated solution in 100 grams of water at 45°C ?
- A. 30 g of KCl B. 35 g of NH_4Cl
 C. 60 g of KNO_3 D. 110 g of NaNO_3
11. The graph shown represents four solubility curves. Which curve best represents the solubility of a gas in water?

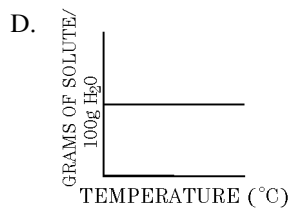
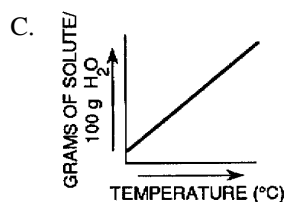
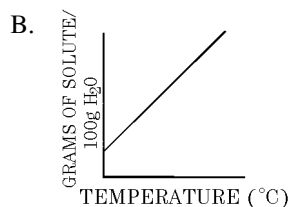
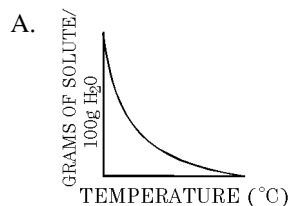
- A. A B. B
 C. C D. D



12.

Temperature ($^{\circ}\text{C}$)	Grams of Solute/ 100 g H_2O
10	70
30	45
60	23
90	11

A student obtained the following data in determining the solubility of a substance. Which graph best represents the solubility curve drawn from the results obtained by the student?



13. A solution containing 60 grams of NaNO_3 completely dissolved in 50 grams of water at 50°C is classified as being
- A. saturated
 B. supersaturated
 C. dilute and unsaturated
 D. dilute and saturated

14. Which of the following saturated solutions is the most concentrated?
- A. KI at 0°C B. KNO_3 at 70°C
C. NH_3 at 100°C D. KClO_3 at 10°C
15. When sodium chloride is dissolved in water, the resulting solution is classified as a
- A. heterogeneous compound
B. homogeneous compound
C. heterogeneous mixture
D. homogeneous mixture
16. Under which conditions are gases most soluble in water?
- A. high pressure and high temperature
B. high pressure and low temperature
C. low pressure and high temperature
D. low pressure and low temperature
17. Which procedure will increase the solubility of KCl in water?
- A. stirring the solute and solvent mixture
B. increasing the surface area of the solute
C. raising the temperature of the solvent
D. increasing the pressure on the surface of the solvent
18. How many grams of KCl must be dissolved in 200 grams of water to make a saturated solution at 60°C ?
- A. 30 g B. 45 g C. 56 g D. 90 g
19. According to Reference Table D, which of the following substances is least soluble in 100 grams of water at 50°C ?
- A. NaCl B. KCl
C. NH_4Cl D. HCl
20. According to Reference Table G, which solution is saturated at 30°C ?
- A. 12 grams of KClO_3 in 100 grams of water
B. 12 grams of KClO_3 in 200 grams of water
C. 30 grams of NaCl in 100 grams of water
D. 30 grams of NaCl in 200 grams of water

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