

The following questions are 2 points each:

1. What is another name for a solution?

a homogeneous mixture

2. Why/how is water able to dissolve so many compounds?

it is a polar molecule

DEFINE the following terms. (1 point Each)

3. Supersaturated- holding more solute than should be possible at that temp.
4. Solute- What is dissolved, usually smaller amount.
5. Dilute solution- a relatively small amount of solute in solution
6. Solvent- What does the dissolving.
7. Aqueous solution- water is the solvent
8. Standard solution- a solution with an accurately known concentration
9. Saturated solution- holding the maximum amount of solute in solution for a given temp.
10. Unsaturated solution- holding less than the maximum amount of solute in the solution for a given temp.
11. Concentrated solution a relatively large amount of solute in solution

The following Questions are 3 points each:

12. What is the percent by mass of sodium acetate if I have 85 grams of sodium acetate dissolved into 750 grams of water?

$$750 + 85 = \frac{85}{835} \times 100 = 10.18\%$$

13. What is the percent by mass of calcium nitrate if I have 28 grams of calcium nitrate dissolved into 390 grams of water?

$$28 + 390 = \frac{28}{418} \times 100 = 6.70\%$$

14. What is the percent by mass of calcium chloride if in 730 grams of solution I have 98 grams of calcium chloride?

$$\frac{98}{730} \times 100 = 13.42\%$$

15. What is the percent by mass of calcium chloride if in 378 grams of solution I have 193 grams of calcium chloride?

$$\frac{193}{378} \times 100 = 51.06\%$$

16. If I need to make 3870 grams of a solution that is 23.8% by mass sugar, how many grams of sugar will I need to dissolve into the water?

$$23.8\% = \frac{X}{3870} \times 100$$

921.06 g Sugar

17. How many grams of water are in the above solution?

$$3870 - 921.06 = 2948.94 \text{ g H}_2\text{O}$$

18. If I need to make 835 grams of a solution that is 67.2% by mass salt, how many grams of salt will I need to dissolve into the water?

$$67.2\% = \frac{X}{835} \times 100$$

561.12 g Salt

19. How many grams of water are in the above solution?

$$835 - 561.12 = 273.88 \text{ g H}_2\text{O}$$