

The following questions are 2 points each:

1. What is another name for a solution?
2. Why/how is water able to dissolve so many compounds?

DEFINE the following terms. (1 point Each)

3. Supersaturated-
4. Solute-
5. Dilute solution-
6. Solvent-
7. Aqueous solution-
8. Standard solution-
9. Saturated solution-
10. Unsaturated solution-
11. Concentrated 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?
13. What is the percent by mass of calcium nitrate if I have 28 grams of calcium nitrate dissolved into 390 grams of water?
14. What is the percent by mass of calcium chloride if in 730 grams of solution I have 98 grams of calcium chloride?

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

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?

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

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?

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

The following questions are worth 2 points each:

20. Describe how to dilute a solution.

21. During a dilution process, the AMOUNT of solute... (finish this statement)

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For the following problems, point values are shown for each.

22. If I dissolve 12.4 moles of potassium chloride in water to make 0.3 liters of solution, what is the molarity of my solution? (3 points)

23. If I dissolve 3.1 moles of lithium iodide in water to make 1.4 liters of solution, what is the molarity of my solution? (3 points)

24. How many grams of NaOH (Molar Mass = 40.0 grams /mole) would be required to produce a 2.7 M (molar) solution with a volume of 14 mL? (3 points)

25. How many grams of NaCl (Molar Mass = 58.44 grams /mole) would be required to produce a 0.3 M (molar) solution with a volume of 4.2 L? (3 points)

26. If I have 550 mL of a 2.5 M solution of NaOH (Molar Mass = 40.0 grams /mole), how many grams of NaOH do I have? (3 points)

27. If I have 1.56 L of a 0.5 M solution of NaCl (Molar Mass = 58.44 grams /mole), how many grams of NaCl do I have? (3 points)

28. If I have 2.80 L of a 12 M solution of HCl, what will my molarity be if I dilute this with enough water to create 1.5 liters of solution? (3 points)

29. If I have 340 mL of a 5.5 M solution of HCl, what will my molarity be if I dilute this with enough water to create 2.5 liters of solution? (3 points)

30. What is the molarity of my final solution if I add 650 mL to 1.34 liters of a 3.5 M solution of NaCl? (4 points)

31. What is the molarity of my final solution if I allow 250 mL of solvent to evaporate from 4.25 liters of a 0.75 M solution of NaCl? (4 points)