

# SOLUTIONS

CLASSIC

## Percent Concentrations – 1

Date:

1. Explain, what is percent concentration?
2. What is the percent concentration of the solution prepared with 20 g of NaCl and 380 g water?
3. The solubility of  $\text{AgNO}_3$  is 220 g /100 g water. How many grams of salt must be added to saturate a solution that is 200 g and 60% salt by mass?
4. How many grams of sugar are there in 200 g of solution that is 15% sugar by mass?
5. How many grams of methanol and water are used to prepare 180 g solution that is 40% methanol?
6. 40% of brass, which is the alloy of copper and zinc, is zinc by mass. Find the amounts of copper and zinc in 250 g of brass.
7. In order to make saturated of 400 g of a salt solution that is 25% salt by mass, at 20 °C, 50 g of the salt should be added. What is the solubility of the salt as 25 °C in 100 g water?
8. About 6% of a human body is blood by mass. How many kilograms blood is found in a human body, which is 80 kg?
9. Calculate the percent concentration of the solution, which is prepared by mixing 150 ml of alcohol and 480 g of water by mass? ( $d_{\text{Alcohol}} = 0.8\text{g/mL}$ )
10. How many milliliters of water are there in 1500 ml of water-methanol solution that is 20% methanol by volume?
11. How many milliliters of water and vinegar have to be used to prepare 900 ml solution that is 30% vinegar by volume?
12. If 300 ml solution that is 20% and 1200 ml solution that is 30% by volume are mixed, what will be the percent concentration of the new solution by volume?
13. If 250 g of water is added into 500 g solution that is 10% NaCl by mass, what will be the percent concentration of the new solution by mass?
14. What will be the percent concentration of  $\text{NH}_4\text{Cl}$  by mass if 200 g of solution that is 10%  $\text{NH}_4\text{Cl}$  and 600 g of solution that is 30%  $\text{NH}_4\text{Cl}$  by mass, are mixed?
15. What is the percent of  $\text{NH}_4\text{Cl}$  by mass in the solution which is prepared by mixing of equal masses of two solutions that are 5% and 35%  $\text{NH}_4\text{Cl}$ ?
16. How many grams of solutions that is 10% and 20%  $\text{Ca}(\text{NO}_3)_2$  by mass should be used in order to prepare 500 g solution that is 17.5%  $\text{Ca}(\text{NO}_3)_2$  by mass?
17. What is the value of n if a solution that is 24% by mass, is prepared with 250 g water and 150 g of  $\text{CuSO}_4 \cdot n \text{H}_2\text{O}$ ? ( $\text{CuSO}_4 = 160 \text{ g/mol}$ )