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# Concentration calculations worksheet answers

English (United Kingdom) English (United States) Español (Latinoamérica) skip to: page content | links on this page | web navigation | footer (web information) Practice Questions 2.2: Calculations involving solution concentration This worksheet is also available in the following formats: Word | RTF | PDF 1. An aqueous solution of 0,750 l contains 90,0 g of ethanol, C2H5OH. Calculate the molar concentration of the solution in mol· L-1.   Solution: 1. The question asks for concentration, which means finding molarity, or: moles solute liter solution 2. To convert the weight of ethanol into moles, we need to find the molar mass of C2H5OH using the periodic table. The molar weight is 46.1 g·mol-1 3. Molarita also requires volume; The question tells us we have 0.750 L.    Put this information together to solve the problem and include the information so that it finishes with the desired unit: mol L = 90.0 g × 1 mol 46.1 g × 1 0.750 L = 2.60 mol L Our final answer: [C2H5OH] = 2.60M 2. What mass of NaCl is dissolved in 152 ml of the solution if the concentration of the solution is 0,364 M?   Solution: 1. The question asks about weight, so we want to calculate gram 2. We've got concentration. I suggest you rewrite the concentration, as shown on the right side, to better see how the units are cancelled. 0.364 pier L 3. Since the question involves weight, we will need to know the molar mass of NaCl Using the periodic table we find that the molar mass of NaCl is 58.5 g·mol-1 4. The question gives us volume in ml. Our concentration unit uses L, so we convert 152 ml to 0.152 L. Put this information together to solve the problem and arrange the information so that it finishes with the desired unit: g = × × 0.152 L = 3.24 g of answer 3. What mass of dextrose, C6H12O6 dissolved in 325 ml of 0,258 M solution?   Solution: 1. The question asks about weight, so we want to calculate gram 2. We get a concentration (0.258 M). I suggest you rewrite the concentration, as shown on the right side, to better see how the units are cancelled. 0.258 mol L 3. Since the question involves weight, we will need to know the molar mass C6H12O6 Using the periodic table we find the molar mass C6H12O6 as 180.1 g·mol-1 4. The question gives us volume in ml. Our concentration unit uses L, so we convert 325 ml to 0.325 L. Put this information together to solve the problem and arrange the information so that it finishes with the desired unit: g = × × 0.325 L = 15.1 g of answer 4. The weight of 98 g of sulphuric acid H2SO4 is dissolved in water to prepare the solution by 0.500 M. What is the volume of the solution?   Solution: 1. The question requires volume, so we want to calculate liters, L (or ml) 2. The concentration of the solution is: 0,500 mol L 3. Since the question involves weight, we will need to know the stool H2SO4 Using the periodic table, we find the molar mass of H2SO4 at 98.1g·mol-1 Put this information together to solve the problem and provide information so that it finishes with the desired unit: L = × × = 2.00 L response 5. The Sodium Carbonate Solution Na2CO3 contains 53,0 g of dissolved solution in 215 ml of solution. What's his molarita?   Solution: 1. The question is asked by molarity: moles solute liter solution 2. To convert the weight of ethanol into moles, we need to find the molar mass of Na2CO3 using a periodic table. The molar weight of Na2CO3 is 106.0 g·mol-1 3. Molarita also requires volume; The question tells us that we have 215 ml, or 0.215 L. Put this information together to solve the problem and arrange the information so that it finishes with the desired unit: mol L = 53.0 g × 1 mol 106.0 g × 1 0.215 L = 2.33 mol L Our final answer: [Na2CO3 ] = 2.33 M 6. What is the molarity of the HNO3 solution, which contains 12,6 g of dissolved solution in 5,00 l of solution?   Solution: 1. The question is asked by molarity: moles solute liter solution 2. To convert the weight of ethanol into moles, we need to find the molar mass of HNO3 using a periodic table. The molar weight is 64.0 g·mol-1 3. Molarita also requires volume; The question tells us we have 5.00 L. Put this information together to solve the problem, and include the information so that it finishes with the desired unit: mol L = 12.6 g × 1 mol 64.0 g × 1 5.00 L = 0.0393 mol L Final response: [HNO3] = 3.93 × 10-2 M 7. What mass of copper nitrate(II) Cu(NO3)2 is present in 50,00 ml 4,55 × 10-3 M of aqueous solution?   Solution: 1. The question asks about weight, so we need to calculate gram 2. We've got concentration. I suggest you rewrite the concentration, as shown on the right side, to better see how the units are cancelled. 4.55 × 10-3 pier L 3. Since the question involves weight, we will need to know the molar mass of Cu (NO3)2 Using the periodic table we find molar mass Cu (NO3) 2 to 187.6 g·mol-1 4. The question gives us volume in ml. Our concentration unit uses L, so we convert 50.00 ml to 0.0.05000 L. Put this information together to solve the problem, arrangement information end up with the desired unit: g = × × 0.0500 L = 4.27 × 10-2 g answer The final response: 4.27 × 10-2 g of copper nitrate(II) are present. Return to notes

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