

TOPIC 3. CLASSWORK 2

Example 1. A patient needs to receive 250 mg of a medication. The medication is available as a 5% solution. How many milliliters of the solution should be administered to the patient?

GIVEN:

QUESTION: _____

FORMULA:

CALCULATIONS:

ANSWER:

Example 2. You have a 10% solution of a drug, and you need to prepare 200 milliliters of a 2% solution. How many milliliters of the 10% solution and how many milliliters of water will you need?

GIVEN:

QUESTION: _____

FORMULA:

CALCULATIONS:

ANSWER: _____

Example 3. A 250 mL bottle of disinfectant contains 3% (w/v) hydrogen peroxide (H_2O_2). Calculate the molarity and normality of the solution for oxidation purposes. Molar mass of H_2O_2 =34.01g/mol.

GIVEN:

QUESTION: _____

FORMULA:

CALCULATIONS:

ANSWER: _____

Example 4. You dissolve 90 g of glucose ($C_6H_{12}O_6$) in 300 g of water to prepare an oral rehydration therapy (ORT) solution. Calculate the molality and molarity of the glucose solution. Molar mass of glucose = 180.16 g/mol.

GIVEN:

QUESTION: _____

FORMULA:

CALCULATIONS:

ANSWER: _____

Example 5. A 1 L bottle of an antacid contains 7.4 g of calcium hydroxide Ca(OH)_2 . Calculate the normality of the solution for neutralizing stomach acid.

GIVEN:

QUESTION: _____

FORMULA:

CALCULATIONS:

ANSWER: _____

Example 6. A pharmaceutical company prepares 1.2 liters of an antibiotic solution by dissolving 95 g of the active ingredient amoxicillin trihydrate $\text{C}_{16}\text{H}_{19}\text{N}_3\text{O}_5 \cdot 3\text{H}_2\text{O}$ in water. The solution's density is 1.05g/mL. Calculate molarity and molality of the solution.

GIVEN:

QUESTION: _____

FORMULA:

CALCULATIONS:

ANSWER: _____

Example 7. A multivitamin infusion contains 25.4 g of ascorbic acid $C_6H_8O_6$ in 750 mL of solution. For a redox reaction, ascorbic acid acts as a reducing agent and undergoes a 2-electron oxidation. Calculate the molarity and normality of the ascorbic acid solution.

GIVEN:

QUESTION: _____

FORMULA:

CALCULATIONS:

ANSWER: _____