

**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?

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**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?

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**ANSWER:** \_\_\_\_\_

**Example 3.** A 250 mL bottle of disinfectant contains 3% (w/v) hydrogen peroxide ( $\text{H}_2\text{O}_2$ ). Calculate the molarity and normality of the solution for oxidation purposes. Molar mass of  $\text{H}_2\text{O}_2=34.01\text{ g/mol}$ .

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**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.

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

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**ANSWER:** \_\_\_\_\_

**Example 6.** A pharmaceutical company prepares 1.2 liters of an antibiotic solution by dissolving 95 g of the active ingredient amoxicillin trihydrate  $C_{16}H_{19}N_3O_5 \cdot 3H_2O$  in water. The solution's density is 1.05g/mL. Calculate molarity and molality of the solution.

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**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.

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