

CLASSWORK 1

1. Calculate the amount of Tris [Tris (Hydroxymethyl) Aminomethane] needed to make 500 ml of a 1M stock solution. MW=121.14 g/mole

GIVEN:

QUESTION: _____

FORMULA:

CALCULATIONS:

ANSWER: _____

2. Calculate the amount of EDTA (ethylenediamine tetraacetic acid, disodium salt) needed to make 500 ml of a 0.5 M stock solution. MW=372.2 g/mole.

GIVEN:

QUESTION: _____

FORMULA:

CALCULATIONS:

ANSWER: _____

3. How many grams of NaCl do you have to put into a 5-liter container to make a physiological saline solution with concentration of NaCl = 0,15M?

GIVEN:

QUESTION: _____

FORMULA:

CALCULATIONS:

ANSWER: _____

4. Calculate the mass of acetic acid (CH_3COOH) needed for preparing a 250 ml solution with a molar concentration of 0.25 mole/L. Estimate the percentage of the total mass of acetic acid in the prepared solution ($\rho=1.12$ g/ml).

GIVEN:

QUESTION: _____

FORMULA:

CALCULATIONS:

ANSWER: _____

5. The percentage of the total mass of sulfuric acid (H_2SO_4) in a solution is 20%. Calculate the mass of the solution and its molar concentration, if $\rho=1.12 \text{ g/ml}$, $V=300 \text{ ml}$.

GIVEN:

QUESTION: _____

FORMULA:

CALCULATIONS:

ANSWER: _____

6. How would I make up 500 mL of a 1 M solution of NaCl?

GIVEN:

QUESTION: _____

FORMULA:

CALCULATIONS:

ANSWER: _____

7. Calculate the amount of β -mercaptoethanol needed in a 15 ml extraction buffer to obtain a concentration of 10 mM. β -mercaptoethanol is available as a 98% (W/W) solution. Assume a molecular weight of 78.13 g/mol, $\rho=1.114$ g/ml.

GIVEN:

QUESTION: _____

FORMULA:

CALCULATIONS:

ANSWER: _____