Calculate the molar concentration of the following solutions

1)   1.0 L of a solution containing 0.26 mol HCl
2)   4.0 L of a solution containing 2.8 mol HNO_3
3)   50.0 mL of a solution containing 0.0700 mol NH_4Cl
4)   250.0 mL of a solution containing 25.0 grams NaCl
5)   600.0 mL of a solution containing 1.50 g $CaCO_3$
6)   325 mL of a solution containing 10.0 g $Cr(NO_3)_3 \cdot 9H_2O$

What mass of solute would be dissolved in the given amount of the following solutions ?

7)   1.00 L of 3.00 M NaCl
8)   50.0 mL of 18.0 M H_2SO_4
9)   27.2 mL of 0.0512 M NaOH

Describe how you would make the following solutions

10)   1.00 L of 3.00 M NH_4Cl
11)   125 mL of 0.500 M $Ba(NO_3)_2$
12)   2.75 L of 0.0120 M NaOH

How many molecules of solute are there in the following solutions ?

13)   500.0 mL of 0.250 M $Hg(NO_3)_2$
14)   250.0 mL of 0.100 M $SbCl_3$
15)   0.050 mL of 18 M H_2SO_4

Answers :

1) 0.26 M HCl
2) 0.70 M HNO_3
3) 1.40 M NH_4Cl
4) 1.71 M NaCl
5) 0.0250 M $CaCO_3$
6) 0.0769 M $Cr(NO_3)_3$
7) 176 grams NaCl
8) 88.3 grams H_2SO_4
9) 0.0557 grams NaOH
10) Dissolve 161 g NH_4Cl in about 500 mL of H_2O in a volumetric flask.
      Add water to raise total volume to 1.00 L.
11) Dissolve 16.3 g $Ba(NO_3)_2$ in about 50 mL of H_2O in a volumetric flask.
      Add water to raise total volume to 125 mL.
12) Dissolve 1.32 g NaOH in about 1.50 L of H_2O in a volumetric flask.
      Add water to raise total volume to 2.75 L.
13) 7.53×10^{22} molecules $Hg(NO_3)_2$
14) 1.51×10^{22} molecules $SbCl_3$
15) 5.4×10^{20} molecules H_2SO_4