10. What volume of a 2.3 M solution can be made using 3.5 moles of calcium phosphate?

$2.3 = \frac{3.5}{x}$ $\frac{2.3x}{2.3} = \frac{3.5}{2.3}$ $x = 1.5\ L$

Topic 3: Properties of Acids and Bases

11. Determine if the following is an acid, base, salt, neither, or all:

a) HCl Acid
b) NaOH Base
c) $MgCl_2$ Salt
d) $Ca(OH)_2$ Base
e) H_3PO_4 Acid
f) turns litmus paper red Acid
g) turns litmus paper blue Base
h) turns phenolphthalein pink Base
i) conducts electricity All
j) tastes sour Acid

12. What is the difference between concentration of an acid/base and strength of an acid/base?

Concentration → solubility
Strength → how well it ionize/dissociate

13. Name/write formulas for acids and bases:

a) HNO_3 Nitric acid
b) HF hydrofluoric acid
c) H_2PO_3 Phosphoric acid
d) Carbonous acid H_2CO_3
e) hydrobromic acid HBr
f) Sulfuric acid H_2SO_4
g) $Mg(OH)_2$ Mag. hydroxide
h) $Cu(OH)_3$ Copper III hydroxide
i) lithium hydroxide LiOH
j) tin IV hydroxide $Sn(OH)_4$

14. What type of reaction occurs when an acid and a base react? Write a general equation.

Neutralization

$HA + BOH \rightarrow H_2O + BA$

15. What makes something an acid? A base? → $[OH^-]$
↳ $[H^+]$ or $[H_3O^+]$

Topic 4: Acid and Base Calculations (pH, pOH, $[H^+]$, $[OH^-]$)

16. Describe the pH scale (what is the range, which numbers are acid, which are base, etc)

0 - 14

0 Acid — 7 Base — 14
↓
Neutral