Key

Question #	Answer	Explanation/Work if Math
1	OH^- (hydroxide ion)	Arrhenius definition of bases: bases produce OH^- as the only negative ion in aqueous solution
2	0.10 M	$(\#H^+) \times M_A \times V_A = (\#OH^-) \times M_B \times V_B$ $2 \times M_A \times 125. = 1 \times 0.50 \times 50.$ $M_A = 0.10\,M$
3	$[H^+] = [OH^-]$	In a neutral solution, the concentration of OH^- is equal to the concentration of H^+.
4	HCl (acid) + H_2O (base) → Cl^- (base) + H_3O^+ (acid)	conjugate pairs differ by only 1 H^+. The acid is the species w/ more H^+ in pair. The base is the species w/ fewer H^+ in the pair.
5	100 x	Each unit decrease in pH scale is a 10x increase in acidity or $[H^+]$. pH 4 → pH 2 is 2 factors so $10^2 = 100\times$
6	ions	electrolytes are substances that dissolve in water & form solutions that conduct electricity due to the presence of ions.
7	between 4.4 & 4.5	methyl orange is red when pH is >4.4 litmus is red when pH is <4.5
8	acid + base → salt + water	In a neutralization rxn, an acid and a base react, producing a neutral salt and water
9	titration	definition
10	can use any acid (such as those on Table K)	acids turn litmus red
11	$[H^+]$ increases	As pH ↓, the concentration of H^+ ↑ & OH^- ↓.
12	1×10^{-2} or 10^{-2}	$[H_3O^+] = 10^{-pH}$

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13	pH = 11	$[H_3O^+] = 1 \times 10^{-pH}$ $= 1 \times 10^{-11}$ ← pH
14	H^+	According to Arrhenius, acids produce H^+ as the only positive ion in aqueous solution.
15	K_2SO_4	neutralization rxn: acid + base → salt + water *double replacement (innies/outies) $H_2SO_4 + 2KOH \rightarrow K_2SO_4 + 2H_2O$
16	green	The range of color change from yellow to blue is 6.0 – 7.6. since 6.5 is within that range, we see a mix of colors.
17	bases accept (gain) H^+ acids donate (lose) H^+	BAAD
18	any base containing OH^- (use Table L)	Bases produce OH^- as the only neg. ion in aqueous solution according to Arrhenius.
19	moles H^+ = moles OH^-	At equivalence point in a titration, the solution is exactly neutral, so moles H^+ = moles OH^-
20	Cu, Ag, & Au	Only metals more active than H_2 (higher than H_2 on Table J) will react w/ acids.
21	• NaCl (ionic salt) • H_2SO_4 (acid, Table K) • NaOH (base, Table L) NOT CH_3OH (alcohol) or H_2O b/c molecular	Electrolytes include acids, bases, & salts (ionic compounds)
22	A substance that can both accept & donate H^+, acting as either an acid or base	ex) $H_2O + H_2O \rightarrow OH^- + H_3O^+$ base, acid → base, acid H_2O acts as both an acid + a base
23	$2HCl + Mg \rightarrow MgCl_2 + H_2(g)$ Mg^{+2} Cl^-	reaction of an acid + a more active metal (Table J) is a single replacement rxn, producing $H_2(g)$ and a salt.
24	For both solutions, bromcresol green would appear blue	Range of color change for bromcresol green is 3.8-5.4; since both pH 6 & 8 are above this range, they would both appear blue
25	0.17 M	$(\#H^+) \times M_A \times V_A = (\#OH^-) \times M_B \times V_B$ $1 \times 0.15 \times 20. = 1 \times M_B \times 18.$ $0.17_M = M_B$