**Chemistry 20 – Lesson 27**

**Indicators**

**/11**

1.

/1 **An indicator is a solution that changes color depending on the pH of the solution**.

2.

/2 **Since neutralization between a strong acid and a strong base occurs at pH 7 one would choose an indicator that changes color at pH 7. Possibilities include bromocresol green, bromothymol blue, phenol red, phenolphthalein**.

bromothymol blue turned yellow **∴pH<6.0**

/2 methyl orange turned yellow **∴pH>4.4**

phenolphthalein is colorless **∴pH<8.2**

**The pH range is between 4.4 and 6.0**

4.

Solution A

methyl violet was blue **∴pH>1.6**

/2 methyl orange was yellow **∴pH>4.4**

methyl red was red **∴pH<4.8**

phenolphthalein was colorless **∴pH<8.2**

**The pH range for solution A is between 4.4 and 4.8**

Solution B

indigo carmine was blue **∴pH<11.4**

/2 phenol red was yellow **∴pH<6.6**

bromocresol green was blue **∴pH>5.4**

methyl red was yellow **∴pH>6.0**

**The pH range for solution B is between 6.0 and 6.6**

Solution C

phenolphthalein was colorless **∴pH<8.2**

/2 thymol blue was yellow **∴2.8<pH<8.0**

bromocresol green was yellow **∴pH<3.8**

methyl orange was orange **∴3.2<pH<4.4**

**The pH range for solution C is between 3.2 and 3.8**