

Review Packet Answer Key

Acids & Bases (Topic 10 in your review book)

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|------|-------|
| 1. 4 | 10. 4 |
| 2. 3 | 11. 1 |
| 3. 2 | 12. 1 |
| 4. 3 | 13. 2 |
| 5. 4 | 14. 3 |
| 6. 2 | 15. 2 |
| 7. 2 | 16. 2 |
| 8. 4 | 17. 4 |
| 9. 2 | |

18. **blue**

19. **Thymol blue and bromothymol blue**

20. Since methyl orange is only yellow if the pH is greater than 4.4, and litmus is only red if the pH is less than 5.5, any **pH value between 4.4 and 5.5** is an acceptable answer.

21. **Any base** would work, so look on Table L for ideas, if you need to. Acceptable answers include NaOH, Ca(OH)₂ etc.

22. **Sample B is the methanol.** This can be concluded because alcohols are **molecular substances** and do not dissolve in water to produce ions, and hence are **nonconductors** when dissolved.

23. Reactivity with Mg metal – a reaction indicates an acid

Bromothymol blue indicator – yellow color indicates that the pH was 6.0 or lower, which is an acidic pH

24. The explanation must be that all 3 solutions have **pH values greater than 4.4.**

25. **OH⁻¹ ion** (hydroxide)

26. Molarity = moles / Liter of solution = 0.500 moles/0.400 L = **1.2 Molar or 1.2 M**

27. no question

28. This is a neutralization equation so the products of a reaction between an acid and a base are always water and some salt. In this case, **H₂O + NaNO₃**

29. Use Table K... **“hydrochloric acid”**

30. Use the titration equation from Table T:

$$M_A V_A = M_B V_B$$
$$M_A (10.22\text{mL}) = (0.500\text{ M}) (17.03\text{ mL})$$
$$M_A = \mathbf{0.833\text{ Molar}}$$

31. The volumes each have 4 significant figures, and the Molarity value has 3, so the answer for the calculated HCl Molarity should have **3 significant figures.**