

Multiple Choice Response Sheet

Name: _____

1. A

19. _____

2. B

20. _____

3. A

21. _____

4. C

22. _____

5. D

23. _____

6. B

24. _____

7. B

25. _____

8. A

26. _____

9. A

27. _____

10. B

28. _____

11. C

29. _____

12. B

30. _____

13. C

31. _____

14. B

32. _____

15. C

33. _____

16. D

34. _____

17. _____

35. _____

18. _____

36. _____

Acid-Base #2
(Indicators)

1. $[H_3O^+] > 6.3 \times 10^{-3} M$ Red.

$[H_3O^+] < 2.5 \times 10^{-4} M$ Blue

$$pH = -\log(6.3 \times 10^{-3} M) \\ = 2.20$$

$$pH = -\log(2.5 \times 10^{-4} M) \\ = 3.60$$

$$pH = \frac{2.20 + 3.60}{2}$$

$$pH \text{ of transition} \\ \text{point} = 2.90$$

2. The solution turning blue indicates an increase in $[In^-]$ showing a shift to the right. This shift would occur because of a sudden decrease in the rate of the reverse reaction as H_3O^+ is removed by OH^- . The forward rate would stay the same (until after the initial shift)