

**School of Chemistry and Biochemistry, TIET, Patiala**  
**Applied Chemistry (UCB008)**  
**Tutorial Sheet-I (General)**

- Q1. What do you mean by primary and secondary standards in volumetric analysis?
- Q2. What is meant by the term indicator? Give example.
- Q3. What is the difference between volumetric and conductometric titrations?
- Q4. If 49 g of  $\text{H}_2\text{SO}_4$  is dissolved in water to get a 500 mL of the solution, calculate the normality and molarity of the solution.
- Q5. Name different types of titrations.
- Q6. What happens at the molecular level when indicator color changes?
- Q7. Differentiate between end point and equivalence point.
- Q8. Comment whether all these are same or different?

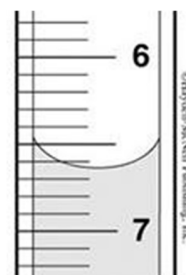
Element, ion, compound and mixture

- Q9. Why does any solution (or compound) appear colorless or colored?

- Q10. Write down the burette reading.

*(Meniscus represents the level of solution, initial reading was at 0.0 mL)*

Reading = \_\_\_\_\_ mL



- Q11. If you need to transfer 50 mL solution, which glassware would you prefer and why? The possible choices are: conical flask, beaker, graduated cylinder
- Q12. Which meniscus level is used to record burette reading for colored and colorless solutions?
- Q13. Pictorially, differentiate between accuracy and precision.
- Q14. In a volumetric titration, at the end point color change occurs. Would you add more solution from burette to further intensify the color? Comment.
- Q15. When 0.1 M HCl is titrated conductometrically against 0.1 M NaOH, what is the pH at equivalence point?
- Q16. When 0.1 M HCl is titrated against 0.1 M NaOH using phenolphthalein as an indicator (volumetric titration), what is the pH at end point?

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