

Board – ICSE

Class – 10<sup>th</sup>

Chapter – Analytical Chemistry

1. What do you understand by the following:
  - (i) Analysis,
  - (ii) Qualitative analysis,
2. Write the probable colour of the following salts:
  - (i) Iron (III) chloride
  - (ii) Potassium nitrate
  - (iii) Ferrous sulphate
  - (iv) Aluminum acetate
3. Name the probable cations present in the following observations:
  - a. White precipitate insoluble in  $\text{NH}_4\text{OH}$  but soluble in  $\text{NaOH}$
  - b. Blue-coloured solution
4. What do you observe when an ammonium salt is heated with caustic soda solution?  
Write the word equation.
5. How will you distinguish  $\text{NH}_4\text{OH}$  solution from  $\text{NaOH}$  solution?
6. Why is an alkali added drop by drop to the salt solution?
7. Write balanced equations:
  - (a) Reaction of sodium hydroxide solution with iron (III) chloride solution.
  - (b) Copper sulphate solution with ammonium hydroxide solution.
8. Write the probable colour of the following salts?
  - (a) Ferrous salts
  - (b) Ammonium salts
  - (c) Cupric salts
  - (d) Calcium salts
  - (e) Aluminium salts

9. Name:

- (a) a metallic hydroxide soluble in excess of  $\text{NH}_4\text{OH}$ .
- (b) a metallic oxide soluble in excess of caustic soda solution.
- (c) a strong alkali.
- (d) a weak alkali.
- (e) Two colourless metal ions.

10. Name the chloride of a metal which is soluble in excess of ammonium hydroxide. Write an equation for the same.

11. On adding dilute ammonia solution to a colourless solution of a salt, a white gelatinous precipitate appears. This precipitate however dissolves in addition to excess ammonia solution. Identify (choose from Na, Al, Zn, Pb, Fe)

- (a) Which metal salt solution was used?
- (b) What is the formula of the white gelatinous precipitate obtained?

12. Name:

- (a) A yellow monoxide that dissolves in hot and concentrated caustic alkali.
- (b) A white, insoluble oxide that dissolves when fused with caustic soda or caustic potash.
- (c) A compound containing zinc in the anion.

13. What do you observe when freshly precipitated aluminum hydroxide reacts with a caustic soda solution? Give a balanced equation.

14. How will you distinguish lead carbonate and zinc carbonate in solution?

15. What is observed when hot concentrated caustic soda solution is added to

a. Zinc

b. Aluminium

Write balanced equations.



16. What do you understand about amphoteric oxide?

17. Give the balanced equations for the reaction with two different amphoteric oxides with a caustic alkali.

18. You are provided with two reagent bottles marked A and B. One of which contains  $\text{NH}_4\text{OH}$  solution and the other contains  $\text{NaOH}$  solution. How will you identify them by a chemical test?

19. What happens when ammonia solution is added first dropwise and then in excess to the following solutions: (i)  $\text{CuSO}_4$  (ii)  $\text{ZnSO}_4$

Write balanced equations for these reactions.

20. What do you understand by the following:

(i) Reagent

(ii) Precipitation