

RS-2

**SECOND REVISION - 2025****12** - Std**CHEMISTRY**

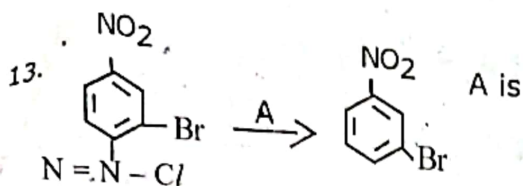
Time : 3.00 Hrs

Marks : 70

**I Answer all the questions. Choose the most appropriate answer from the given four alternatives and write the option code and the corresponding answer.**

15 x 1 = 15

- The metal oxide which cannot be reduced to metal by carbon is  
a) PbO                                      b)  $Al_2O_3$                                       c) ZnO                                      d) FeO
- Which of these is not a monomer for a high molecular mass silicone polymer?  
a)  $Me_3SiCl$                                       b)  $PbSiCl_3$                                       c)  $Me_3SiCl_3$                                       d)  $Me_2SiCl_2$
- The acid having O - O bond in its structure  
a)  $H_2SO_3$                                       b)  $H_2S_2O_6$                                       c)  $H_2S_2O_8$                                       d)  $H_2S_4O_6$
- Which of the following lanthanoid ion is diamagnetic?  
a)  $Eu^{2+}$                                       b)  $Yb^{2+}$                                       c)  $Ce^{2+}$                                       d)  $Sm^{2+}$
- Fac-mer isomerism is shown by  
a)  $[Co(en)_3]^{3+}$                                       b)  $[Co(NH_3)_4(Cl)_2]^+$   
c)  $[Co(NH_3)_3(Cl)_3]$                                       d)  $[Co(NH_3)_5Cl]SO_4$
- A solid compound xy has NaCl structure. If the radius of the cation is 100pm. The radius of the anion will be  
a)  $\left(\frac{100}{0.414}\right)$                                       b)  $\left(\frac{0.732}{100}\right)$                                       c)  $100 \times 0.414$                                       d)  $\left(\frac{0.414}{100}\right)$
- Half life period for first order reaction  
a)  $t_{1/2} = \frac{2.303}{K}$                                       b)  $t_{1/2} = \frac{K}{0.6932}$                                       c)  $t_{1/2} = \frac{K}{2.303}$                                       d)  $t_{1/2} = \frac{0.6932}{K}$
- $H_2PO_4^-$  is the conjugate base of .....  
a)  $PO_4^{3-}$                                       b)  $P_2O_5$                                       c)  $H_3PO_4$                                       d)  $HPO_4^{2-}$
- Which of the following is secondary cell?  
a) Laclanche cell                                      b) Lithium - ion battery  
c) Mercury button cell                                      d) both A and C
- The phenomenon observed when a beam of light is passed through a colloidal solution is  
a) Cataphoresis                                      c) Electrophoresis  
c) Coagulation                                      d) Tyndall effect
- Isopropylbenzene on air oxidation in the presence of dilute acid gives  
a)  $C_6H_5COOH$                                       b)  $C_6H_5COCH_3$                                       c)  $C_6H_5COC_6H_5$                                       d)  $C_6H_5 - OH$
- $CH_3Br \xrightarrow{KCN} (A) \xrightarrow{H_3O^+} (B) \xrightarrow{PCl_5} (C)$  product C is  
a) acetyl chloride  
b) chloro acetic acid    c)  $\alpha$  - chlorocyano ethanoic acid    d) none of these



14. a)  $\text{H}_3\text{PO}_2$  and  $\text{H}_2\text{O}$     b)  $\text{H}^+ / \text{H}_2\text{O}$     c)  $\text{HgSO}_4 / \text{H}_2\text{SO}_4$     d)  $\text{Cu}_2\text{Cl}_2$   
 Vitamin  $\text{B}_2$  is also known as
15. a) Thiamine    b) Riboflavin    c) Nicotinamide    d) Pyridoxine  
 Minimum TFM value for Grade I soaps as per BIS standards is.....
16. a) 70%    b) 60%    c) 76%    d) 56%

**II Answer any six only. Answer Q.No. 24 is compulsory.**

6 x 2 = 12

16. Write the use of Boric Acid.  
 17. What are interstitial compounds?  
 18. What is smelting?  
 19. Write the pH value of the following substances.  
 i) Vinegar    ii) Soap water    iii) Stomach acid    iv) Tomato  
 20. Write the use of emulsions.  
 21. Write Connizaro reaction.  
 22. What is chloropicrin? How it is prepared?  
 23. What is Vulcanization of rubber?  
 24. The rate constant for a first order reaction is  $1.54 \times 10^{-3} \text{S}^{-1}$ . Calculate its half life period.

**III Answer any six only. Answer Q.No. 33 is compulsory.**

6 x 3 = 18

25. Explain acid leaching with an explain.  
 26. Write the molecular formula and structure of Sulphurous acid and Marshall's acid.  
 27. What are hydrate isomers? Give example.  
 28. What are molecular solids? Write the types.  
 29. What is conjugate acid - base pairs? Give example.  
 30. Explain Helmholtz double Layer.  
 31. How will you convert acetone into propane?  
 32. Differentiate DNA and RNA.  
 33. What is TNG. How it is papred?

**IV Answer all the questions.**

5 x 5 = 25

34. a) Explain the electro metallurgy of aluminium. (OR)  
 b) i) What is Burnt alum? How is it prepared? ii) How bleaching powder is prepared?  
 35. a) Compare Lanthanides and Actinoids. (OR)  
 b) Derive integrated rate equation of first order reaction.  $A \rightarrow \text{product}$ .  
 36. a) What are the characteristics of catalyst. (OR)  
 b) Formic acid is powerful reducing agent. Explain.  
 37. a) Explain the classification of amino acids. (OR)  
 b) i) How is Terylene prepared? ii) Write the advantages of food additives.  
 38. a) Explain the preparation of colloids by condensation method. (OR)  
 b) An organic compound (A)  $-\text{C}_7\text{H}_7\text{NO}$  on treatment with  $\text{Br}_2$  and  $\text{KOH}$  gives an amine (B). Which gives carbylamine test. (B) Upon diazotization to give (C). Identify A, B and C. Write necessary reactions.