

# DELHI PUBLIC SCHOOL, JAMMU

## PRE-BOARD-I ASSIGNMENT (2017-18)

**CLASS: 12**

**SUB: CHEMISTRY**

Q.1 A hydroxide ion is a weaker base than an alkoxide ion. Justify.

Q.2 Write the structure of the compound 4-tert-Butyl-3-iodoheptane.

Q.3 What happens when bromine attacks  $\text{CH}_2 = \text{CH}-\text{CH}_2-\text{C} \equiv \text{CH}$ .

Q.4  $\text{CH}_2 = \text{CH}-\text{Cl}$  does not undergo  $\text{S}_{\text{N}}$  reaction. Why?

Q.5 (i) Give the structure for DDT.

(ii) Why is it that haloalkanes are more reactive than haloarene towards nucleophiles.

Q.6 Give the major products that are formed by heating each of following ethers with HI

i.  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2-\text{O}-\text{CH}_2\text{CH}_3$  ii.  $\text{CH}_3\text{CH}_2\text{CH}_2-\text{O}-\text{C}(\text{CH}_3)_2\text{CH}_2\text{CH}_3$  .

Q.7 Give an example of heterogeneously catalysed reaction?

Q.8 What is the oxidation number of Ni in  $[\text{Ni}(\text{CO})_4]$ ?

Q.9 Why are primary amines higher boiling than tertiary amines?

Q.10. Name the purines present in DNA.

Q.11. Write formulae of the monomers of polythene and Teflon?

Q.12. Why is bithional is added to the toilet soap?

Q.13. An element having bcc structure with a cell edge of 288pm. If the density of the element is  $7.2\text{g}/\text{cm}^3$ , what is atomic mass of the element?

10. Explain the following terms with suitable example:

i) F-centres ii) Schottky defect.

Q.11. Molarity or molality, which is the best method to express concentration of a solution?

Why?

Q.12. Describe the mechanism of formation of diethyl ether from ethanol in the presence of concentrated sulphuric acid.

Q.13. Which is more basic  $\text{La}(\text{OH})_3$  or  $\text{Lu}(\text{OH})_3$ ? Why?

Q.14 a) Use valence bond theory predict the geometry and magnetic behaviour of  $[\text{Co}(\text{NH}_3)_6]^{+3}$  ion. [At.No. of Co = 27]

b) Write the IUPAC name of  $[\text{Pt}(\text{NH}_3)_2\text{Cl}_2]$

Q.15. Define the following terms:

a) Racemic mixture b) Resolution c) Enantiomers

Q.16. What happens when: (Give chemical reactions)

a) Cyclohexanol is treated with Thionyl chloride?

b) p-Hydroxybenzyl alcohol is heated with HCl?

Q.17 How will you convert : i) Phenol to ethoxybenzene (ii) butan-2-one to but-2-ene (iii) 1-propoxypropane to propanol. [3]

Q.18 Convert the following :- (i) Chloroethane to butane (ii) 1-Bromopropane to 2-Bromopropane (iii) Methyl bromide to methyl iodide. (iv) Methyl Mag. bromide to 2-Methyl propan-2-ol (v) Phenol to 2, 4, 6-tribromophenol.

Q.19 Compound A reacts with HBr to form an alkyl bromide which reacts with Mg in ether & produces B. B is treated with methanal followed by hydrolysis to give C 2-Methyl butanol. A on ozonolysis followed by  $\text{Zn}/\text{H}_2\text{O}$  gives methanal & propanal. Identify A & B & write the reactions involved.

Q.20 Complete the following reactions: i)  $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_3 + \text{HBr} \rightarrow$  (ii)  $\text{C}_6\text{H}_5\text{OC}_2\text{H}_5 + \text{HBr} \rightarrow$  (iii)  $(\text{CH}_3)_3\text{COC}_2\text{H}_5 + \text{HI} \rightarrow$

Q.21 Write chemical reaction equations to illustrate the following reactions

(i) Williamson synthesis of ethers (ii) Kolbe reaction (iii) Swarts reaction (iv) Dow's process

Q.22 Write the names of reagents and equations in the conversion of (i) Propane-2-ol to acetone (ii)

(ii) phenol to salicylaldehyde (iii) anisole to p-methoxyacetophenone (iv) Propene to propan-1-ol (v) Anisole to phenol.