O.P.JINDAL SCHOOL,SAVITRINAGAR

PERIODIC TEST –I(Round-II) (2026-27)

CLASS-XII **MAX.MARKS-20**

SUBJECT-CHEMISTRY **MAX.TIME-1HOUR**

General Instruction:-

(i)All questions are compulsory .There are 12 questions in this question paper with internal choice.
(ii)**SECTION –A:**Question numbers 1 to 6 are MCQs , carrying 1 mark each.
(iii)**SECTION –B:**Question numbers 7 to10 are short answer questions carrying 2 marks each.
(iv)**SECTION –C:**Question numbers 11 and 12 are long questions carrying 3markseach.
(v)Use of calculator is not permitted. However, you may use log tables, if necessary.

1.The magnetic moment of $[NiCl_4]^-$ is :

(a)1.82BM (b)2.82BM

(c)4.42BM (d)5.46BM

2.The coordination number of Co in the complex , $[Co(en)_3]^{3+}$ is

(a)3 (b)4

(c)5 (d)6

3.Which of the following ligand is an ambidentate ligand?

(a)CO (b)NO_2

(c)NH_3 (d)H_2O

4.Inversion of configuration occurs in

(a)S_N2 reaction (b)S_N1 reaction

(c)neither S_N2 nor S_N1 reaction (d) Both S_N2 and S_N1 reaction

5. Which of the following has the highest melting point?

(a)o-dichlorobenzene (b)m-dichlorobenzene

(c)p-dichlorobenzene (d)all have the same melting point

6. Which of the following compounds is more reactive towards S_N1 reaction?

(a)$CH_2 = CHCH_2Br$ (b)$C_6H_5CH_2Br$

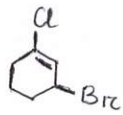
(c)$C_6H_5CH(C_6H_5)Br$ (d)$C_6H_5CH(CH_3)Br$

7. **(i)**Which compound in the given pair would undergo S_N2 reaction at faster rate and why?

$CH_3 –CH_2 –I$ and $CH_3 –CH_2 –Br$

(ii)Arrange the following compounds in the increasing order of their boiling points:

Butane,1-Bromobutane,1-chlorobutane,1-iodobutane

8.(i)Write the IUPAC name of the following compound: 

(ii)How can you convert anile to bromobenzene?

9.Write the structure of the major organic products in each of the following reactions:

(i)$CH_3CH_2CH_2OH + SOCl_2 \xrightarrow{\text{Pyridine}}$

(ii)$CH_3CH_2CH = CH_2 + HBr \xrightarrow{\text{Peroxide}}$

10. Account for the following:

(i)Haloalkanes ,though polar are insoluble in water.

(ii)The C-Cl bond length in chloro benzene is shorter than that in CH_3Cl.

11. Write the difference between S_N2 and S_N1 reaction with mechanism.

12.(i) Using valence bond theory,predict the hybridization and magnetic character of $[CoF_6]^{3-}$

(ii)Write IUPAC name of the following complex : $[CoBr_2(en)_2]^+$

(iii)What type of isomerism is shown by the complex $[Co(en)_3]Cl_3$.

OR

(i)What type of isomerism is shown by the complex; $[Co(NH_3)_5(SCN)]^{2+}$?

(ii)Calculate the spin only magnetic moment of $[Cu(NH_3)_4]^{2+}$ ion .

(iii)Write the IUPAC name and hybridisation of the complex : $[Fe(CN)_6]^{3-}$.
