



	THE JAIN INTERNATIONAL SCHOOL, BILASPUR				
	A JGI Institution				
PRE BOARD 1 EXAMINATION (2014-15)					
CLASS :	XII	SUBJECT :	CHEMISTRY	TIME :	3 Hours

General Instructions:

- (i) All questions are compulsory.
- (ii) Marks for each question are indicated against it.
- (iii) Question numbers **1 to 5** are very short-answer questions and carry **1** mark each.
- (iv) Question numbers **6 to 10** are short-answer questions and carry **2** marks each.
- (v) Question numbers **11 to 22** are also short-answer questions and carry **3** marks each.
- (vi) Question number **24** is value based question and carries **4** mark.
- (vii) Question numbers **24 to 26** are long-answer questions and carry **5** marks each.
- (viii) Use Log Tables, if necessary, Use of calculators is **not** allowed.

1. What type of Semiconductor is obtained when Silicon is doped with Arsenic ? [1]
2. o-nitrophenol has lower boiling point than p-nitrophenol. Why ? [1]
3. Write the structure of 4-Methylpent-3-en-2-one. [1]
4. Write the Carbylamine reaction. [1]
5. Name the only vitamin which can be synthesized in our body. Name one disease caused due to the deficiency of this vitamin. [1]
6. Describe the Leclanche cell **OR** Lead storage battery with diagram. [2]
7. A first order reaction is found to have a rate constant $k = 0.0005 \text{ min}^{-1}$. Find the half life of the reaction. [2]
8. Complete the following equations : [2]
 - i) $2 \text{CrO}_4^{2-} + 2 \text{H}^+ \text{-----} \rightarrow$

- (iii) The enthalpy of atomization of transition metals are high.
17. .i) Give the IUPAC name of $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]\text{Cl}$. [1+2]
 ii) Explain why $[\text{Cr}(\text{NH}_3)_6]^{3+}$ is paramagnetic while $[\text{Ni}(\text{CN})_4]^{2-}$ is diamagnetic.
- 18.a).Bring about the following conversions : [2+1]
 i) Propanone to 2-Methylpropan-2-ol
 ii) Phenol to Salicylaldehyde
 b) Give the mechanism of hydration of propene.
19. Write the main products of the following reactions : [3]
 a) $\text{C}_6\text{H}_5\text{N}_2\text{Cl} + \text{CH}_3\text{COCl} \xrightarrow{\text{Base}}$
 b) $\text{C}_6\text{H}_5\text{NH}_2 + \text{Br}_2(\text{aq.}) \rightarrow$
 c) Coupling reaction.
20. a) Name the bases which are common to both DNA and RNA.
 b) Deficiency of which vitamin causes 'Beri beri' ? What are its symptoms ?
 c) Give one reaction to show that glucose has five hydroxy groups.
21. a) Give the reaction for the formation of the following polymers: [3]
 i) Teflon
 ii) Nylon -6,6
 b) Give two points of difference between Thermoplastic and Thermosetting polymer.
22. Write short notes on (**any three**) : [3]
 i) Artificial sweetening agents
 ii) Antibiotics
 iii) Analgesics
 iv) Synthetic detergents
- *23. Kavita, a housewife got a cut on her finger while working in the kitchen which [4]
 started bleeding and she became panicky. She immediately called her neighbour
 (a chemistry student) who applied ferric chloride on the cut and the bleeding stopped.
 Answer the following questions :
 i) Why did the bleeding stop on applying Ferric chloride ?
 ii) What is the name of the phenomenon involved ? Define it.
 iii) Give the reasons for existence of positive or negative charge on sol particles.

- ii) Why does PCl_3 fume in moisture ?
- iii) Why is N_2 less reactive at room temperature ?

26. (a) Illustrate the following name reactions: [2+3]

- (i) Aldol condensation.
 - (ii) Hell Volhard Zelinsky reaction.
- (b) How would you obtain the following:
- (i) Benzaldehyde from Benzene.
 - (ii) Propene from Propanone.
 - (iii) Benzoic acid from Ethylbenzene.

OR

- (a) Give chemical tests to distinguish between the following:
- (i) Benzoic acid and Phenol.
 - (ii) Benzophenone and Acetophenone
- (b) Complete each synthesis by giving missing reagents or products in the following:


