**Sample Paper – 2013
Class – XII
Subject – Chemistry**

**GENERAL INSTRUCTIONS:**

**\* Answer all the questions:**

**\* Questions 1 to 8 carry one mark each. Answer them in one word or a sentence.**

**\* Questions 9 to 18 carry 2 marks each. Answer them in 20 to 30 words.**

**\* Questions 19 to 27 carry 3 marks each. Answer them in 40 to 50 words.**

**\* Questions 28 to 30 carry 5 marks each. Answer them in 70 words.**

**\* There is no overall choice. However there is internal choice in one question each of two mark and three**

 **marks questions. All 5 marks questions have internal choice.**

**\* Calculator or any other electronic items are not allowed. However logarithm book may be used for**

 **calculations.**

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**1) What happens when CdCl2 is added to AgCl? (1)**

**2) What is meant by elementary reaction? (1)**

**3) Why is chemisorption referred to as activated adsorption? (1)**

**4) Write the role played by pine oil & cresol in froth floatation? (1)**

**5) Give the evidence to prove that [Co(NH3)5Cl]SO4 and [Co(NH3)5 SO4]Cl are ionization isomers. (1)**

**6) Write the structure of 4-Chloro-2,3 dimethylpentan-1-ol. (1)**

**7) For the conversion of a carboxylic acid to acid chloride ,SOCl2 is the reagent preferred over other**

 **reagents. Why? (1)**

**8) Why is vitamin C not stored in our body? (1)**

**9) Why should a solution of a non volatile solute boil at a high temperature?Draw the diagram to prove**

 **your answer. (2)**

**10) The conversion of A to B follows second order kinetics.If the concentration of A is increased to three**

 **times, how will it affect the rate of formation of B? (2)**

**11) Explain the role of catalyst in a reaction diagramatically. (2)**

**12) Explain Hell-Heroult process in the extraction of metals briefly. (2)**

**13) Why is +2 oxidation number of Mn (Z=25) is more stable than its +3 oxidation number while the**

 **same is not true for Iron (z=26). (2)**

**14) Write the IUPAC name of [Cr(en)2(ONO)Cl]Cl.Mention the hybridization & magnetic character of**

 **this complex compound. (2)**

**15) Explain briefly**

 **a) Aryl halides are less reactive than alkyl halides towards nucleophillic substitution reaction..**

 **b) SN2 reaction proceed with complete inversion of configuration. (2)**

 **(or)**

 **Explain a) Allylic halides show high reactivity towards SN1 reaction**

 **b) Dehydro bromination of 2- bromo pentane gives 2- butene as major product. (2)**

**16) What do you mean by ambident nucleophile? Explain this with the help of a chemical reaction taking**

 **a suitable example. (2)**

**17) The basic character of amines in the vapour phase decreases in the order**

 **(CH3)3N ›(CH3)2NH › (CH3)NH2 › NH3 while in the aqueous solution the order is (CH3)2NH ›(CH3)NH2**

 **› (CH3)3N › NH3. Explain. (2)**

**18) Explain diazotization reaction.Write the route of getting Bromobenzene from benzene diazonium**

 **chloride. (2)**

**19) From the following data ,find the type of cubic lattice formed by the iron atoms in its crystal (edge**

 **length = 286pm ,density = 7.86g/cc ,atomic mass= 56 g/mol). (3)**

**20) In a binary solution ,A-B interaction is stronger than A-A interaction or B-B interaction.**

 **a)What type of deviation is shown by this solution?**

 **b) Draw a suitable graph for this .**

 **C) Give an example for this type of solution. (3)**

 **21) Explain**

 **a) Physisorption decreases with increase in temperature.**

 **b) Peptisation**

 **c) Colloid is not a substance but a state of substance .(3)**

 **(or)**

 **Explain the following terms. a)Tyndall effect b) Coagulating value c) CMC (3)**

**22) Write the balanced chemical equation for the following:**

 **a) Copper reacts with dil Nitric acid.**

 **b) Thermal decomposition of Sodiumazide.**

 **c) Calcium phosphide reacts with water. (3)**

**23) Explain giving reasons:**

**a) Transition metals and their compounds are paramagnetic in nature.**

**b) The enthalpies of atomization of Transition metals are high.**

**c) The Transition metals show greater tendency to form complexes. (3)**

**24) Write the chemical reactions for the following name reactions:**

**a)Lucas test b)Williamson’s synthesis c)Kolbe’s reaction (3)**

**25) Show by reactions ,how the reaction of glucose with HI ,Hydroxylamine and acetic anhydride help to**

 **elucidate the structure of glucose. (3)**

**26) How are the following polymers manufactured?**

**a) PVC b)Nylon6,6 c)Buna- S (3)**

**27) a)Write the disadvantage of detergents.**

 **b)Why do we require artificial sweetening agents?**

 **c) What type of drug is equanil? (1+1+1)**

**28) a)Iron does not rust even if the zinc coating is broken in a galvanized iron pipe but rusting occurs**

 **much faster if the tin coating is broken.Explain.**

 **(E0 Zn2+/Zn = -0.76V ; E0 Sn2+/Sn = -0.14V)**

 **b)Represent the cell in which the following reaction takes place:**

 **Mg (s) + 2Ag+(0.0001M) → Mg2+ (0.130M) + 2Ag (s).**

 **Calculate E(cell) if E0  (cell) = 3.17V (2+3)**

 **(or)**

 **a) Explain rusting in the light of electrochemistry.**

 **b) The standard electrode potential of Daniel cell is 1.1V. Calculate ΔG0 for this cell. Comment**

 **on the value of its equilibrium constant. (2+3)**

**29) a)Explain**

 **i) SF6 is not easily hydrolysed whereas SF4 is readily hydrolysed.**

 **ii) Flourine is stronger oxidizing agent than Chlorine.**

 **iii) Solid PCl5 some times exhibits ionic character.**

 **b) Draw the structures of H3PO3 and BrF3. (3+2)**

 **(or)**

 **a) Explain i)Ammonia is soluble in water while Phosphine is not soluble in water.**

 **ii) All the noble gasses are monoatomic in nature.**

 **iii) Bond enthalpy of F2 is less than that of Cl2.**

 **b) Draw the structure of H2SO4 and Chloric acid. (3+2)**

**30 a) Write the chemical reactions to effect the following conversions:**

 **i)Butan-1-ol to Butanoic acid**

 **ii) Benzoyl chloride to Benzaldehyde**

 **iii) Ethanoic acid to propanone**

 **b) How are the following pairs of compounds distinguished:**

 **i) Phenol & benzoic acid ii) Pentan-2-one & Pentan-3-one. (3+2)**

 **(or)**

 **a) Write the chemical equation for the following:**

 **i) Esterification ii)Aldol condensation iii)HVZ reaction**

 **b) Explain**

 **i) Aldehydes are more reactive than ketones in nucleophilic addition reaction.**

 **ii) Propanal is higher boiling than propanone. (3+2)**

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 **TEST SERIES - {CHEMISTRY: XII (CBSE)} CHEMISTRY**

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