**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 is Hardy-Schulze rule?**

 **2. Write the formula for tetraamineaquachloridocobalt(III)chloride.**

 **3. How is ethoxyethane miscible with water?**

 **4. Draw the structure of Pent-2-enal.**

 **5. Name the monomer of nylon6.**

 **6. Name the two components of starch.**

 **7. What is carbylamine reaction?**

 **8. Name a narcotic analgesic.**

 **9. Atoms of element B form hcp lattice and those of element A occupy 2/3 rd of tetrahedral voids.**

 **What is the formula of the compound formed by the elements A and B?**

 **10. Explain the terms Schottky defect and F-centres.**

 **11. Define osmotic pressure and write the equation relating osmotic pressure and molar mass.**

 **12. The conductivity of 0.20 M solution of KCl at 298K is 0.0248 S/cm.Calculate its molar**

 **conductivity.**

 **13. Draw figure to show the splitting of d-orbitals in an octahedral crystal field.**

 **14. A mixed oxide of iron and chromium is fused with sodiumcarbonate**

 **in the presence of air to form a compound A, which on treatment**

 **with sulphuric acid gives an orange compound B. Write equations to**

 **show the conversions. (2)**

 **15. A primary alkyl halide C 4HBr reacted with alcoholic KOH to give a compound A,**

 **this compound reacted with HBr to give B which is an isomer of the parent compound. Write**

 **the reaction for the conversion of A to B and the structures of the isomers. (2)**

 **16. Write short note on any two polyhalogen compounds. (2)**

 **17. Name the monomers of PHBV and its uses. (2)**

 **18. Distinguish between dettol and a 1% solution of phenol. Also name the antiseptic added in**

 **soaps. (2)**

 **19. Why do KCl and acetic acid show abnormal molar mass? What do we infer when Vant Hoff’s**

 **factor is unity. (2+1)**

 **20. Write the cell notation for a cell having magnesium anode and copper cathode. Also**

**calculate the emf of this cell where concentration of magnesium ions is 0.001 M**

**and copper ions is 0.0001 M. The standard emf of Mg is -2.36 V and Cu is 0.34 V.**

 **(3)**

 **21. What is Kraft temperature? Distinguish between lyophilic and lyophobic colloides**

**with an example each. (1+2)**

 **22. Give reason:- (3)**

 **a) Magnesium metal is not used for the reduction of alumina**

 **although it is thermodynamically feasible.**

 **b) Pine oil is used in froth floatation process.**

 **c) Nickel is refined by heating impure nickel in the presence**

 **of carbonmonoxide.**

 **23. Explain the following:- (3)**

 **a) Transition metals exhibit variable oxidation of states.**

 **b) Chromium metal has high melting point.**

 **c) Transition metals form coloured ions.**

 **24. Distinguish between:- (3)**

 **a) Phenol and ethanol.**

 **b) Propanol and 2-propanol.**

 **c) Why are phenols more acidic than alcohols?**

 **25. a)Fluorine exhibits only -1 oxidation state, but the other halogens exhibit +1, +3, +5 states. Why? (1)**

 **b)A pungent smelling gas reacts with excess chlorine to give an explosive compound. Name the gas**

 **and compound. (2)**

**26. a) Write short note on Gabriel phtalimide synthesis. (3)**

 **b) Convert aniline to phenol.**

 **c) Draw the structure of the zwitter ion of sulphanilic acid.**

**27. What happens when D-glucose is treated with:- (3)**

 **a) HI.**

 **b) Bromine water.**

 **c) Nitric acid.**

 **Or**

 **Define the following with relation to proteins:-**

 **a) Peptide linkage.**

 **b) Primary structure.**

 **c) Denaturation.**

**28. a) Show that for a zero order reaction, half life is directly proportional to the initial**

**concentration of the reactant, but in a first order reaction, the half life of the reaction**

**is independent of the initial concentration of reactant. (3)**

 **b) A first order reaction has a rate constant of 0.00115/s.How long will 5 g of this**

 **reactant take to reduce to 3 g? (2)**

 **Or**

 **a) The rate constants of a reaction at 500 K and 700 K are 0.02/s and 0.07/s**

 **respectively. Calculate activation energy. (R=8.314 J/K/mol) (3)**

 **b) A reaction is first order in A and second order in B.Write the rate law expression**

 **and how will the rate be affected if concentration of B is increased three times?**

**29. a) What is the basicity of orthophosphoric acid? (1)**

 **b) The covalency of oxygen is limited to four. Why? (1)**

 **c) Draw the structure of pyrosulphuric acid. (1)**

 **d) Noble gases have very low boiling points. Why? (1)**

 **e) Write a balanced equation for the reaction between xenonhexafluoride and water. (1)**

 **Or**

 **a) Ammonia forms hydrogen bonds but not phosphene. Why? (1)**

 **b) What led Bartlet to carry out reaction between xenon and platinumhexafluoride?(1)**

 **c) Why are halogens coloured? (1)**

 **d) Draw the structure of xenondifluoride and give the equation for its preparation. (2)**

**30. a) Aldehydes are generally more reactive than ketones in nucleophilic addition reactions. Why?(1)**

 **b) What is Aldol condensation? Explain with example. (2)**

 **c) Explain Cannizzaro’s reaction. (2)**

 **Or**

 **a) Convert carbondioxide to acetic acid. (1)**

 **b) Convert butanal to butanoic acid. (1)**

 **c) Convert ethylbenzene to benzoic acid. (1)**

 **d) Draw the structure of 4-Chloropentan-2-one. (1)**

 **e) Give the product obtained when benzoic acid is treated with conc.sulphuric acid and conc.nitric**

 **acid(Nitrating Mixture).**

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