**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**