**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.**

**1. Give an example of heterogeneously catalysed reaction? 1**

**2. What is the oxidation number of Ni in [Ni(CO)4]? 1**

**3. Give the IUPAC name of the following compound**

 ** 1**

**4. Account the following:**

 ***o*-nitrophenol has lower boiling point than *p*-nitrophenol. 1**

**5. Why are primary amines are higher boiling than tertiary amines? 1**

**6. Name the purines present in DNA. 1**

**7. Write formulae of the monomers of polythene and Teflon? 1**

**8. Why is bithional is added to the toilet soap? 1**

**9. An element having bcc structure with a cell edge of 288pm. If the density of the element**

 **is 7.2g/cm3, what is atomic mass of the element? 2**

**10. Explain the following terms with suitable example:**

 **i) F-centres ii) Schottky defect. 2**

**11. Molarity or molality, which is the best method to express concentration of a solution?**

 **Why? 2**

**12. How much electricity in terms of Faraday is required to produce,**

 **i) 20 g of Ca from molten CaCl2?**

 **ii) 50 g of Al from Al2O3? 2**

**13. Which is more basic La(OH)3 or Lu(OH)3? Why? 2**

**14. a) Use valance bond theory predict the geometry and magnetic behaviour of [Co(NH3)6]+3**

 **ion .[At.No. of Co= 27]**

 **b) Write the IUPAC name of [Pt(NH3)2Cl2] 2**

**15. Define the following terms:**

 **a) Recemic mixture b) Resolution c) Enantiomers 2**

**16. What happens when: (Give chemical reactions)**

 **a) Cyclohexanol is treated with Thionyl chloride?**

 **b) p-Hydroxybenzyl alcohol is heated with HCl? 2**

**17. Distinguish between the terms homopolymer and co polymer and give an example of each. 2**

**18. What do you understand by broad spectrum antibiotics? Give one example. 2**

**19. At 300K, 36 g of glucose ( C6H12O6) present per liter in its aqueous solution has an osmotic pressure of 4.98 bars. If the osmotic pressure of another solution of glucose is 1.52 bar at the same**

 **temperature, what would be its concentration? 3**

**20. Write the Nernst equation. Calculate e.m.f of the following cell at 250C:**

 **Pt(s)/Br2(l)/Br-(0.010M)//H+(0.030M)/H2 (1 bar)/Pt(s) [Given: Eo Br2/Br- = +1.08 V] 3**

**21. a) Why is alum added to water for purification?**

 **b) Explain why deltas are formed where river and sea water meet.**

 **c) Describe the preparation of a colloidal solution of arserous sulphide in water. 3**

**22. Outline the principles of refining of metals by the following methods:**

 **i) Zone refining ii) Electrolytic refining iii) Vapour phase refining. 3**

**23. a) Assign reasons for the following observations:**

 **i) Hydrogen iodide is a stronger acid than hydrogen fluoride in aqueous solution.**

 **ii) The basic character among the hydrides of Group 15 elements decreases with increasing**

 **atomic numbers.**

 **iii) Draw the structural formula for XeOF4. 3**

**24. Complete the following reaction equations:**

 **i) Cr2O7-2 + Sn+2 +H+**

 **ii) MnO4- + Fe+2 +H+**

**25. a) Give chemical test to distinguish between phenol and ethanol in seemingly similar**

 **conditions.**

 **b) Write the reaction equation for what happens when teritiory butyl alcohol is heated**

 **with reduced copper at about 573K. 3**

**26. Write one chemical equation to exemplify the following reactions:**

 **a) Carbylamine reaction**

 **b) Hofmann bromamide reaction. 3**

**27. Define the following terms:**

 **i) Co-enzymes**

 **ii) Mutation in biomolecules**

 **iii) Nucleotides. 3**

**28. a) Mention the factors that affect rate of a chemical reaction.**

 **b) A first order reaction takes 69.3 minutes for 50% completion. Set up an equation for determining the time required for 80% completion of this solution.**

 **c) Show that in a first order reaction, time required for completion of 99.9% is 10 times of half-life (t1/2) of the reaction. 5**

**29. Account for the following:**

 **a) PH3 is a weaker base than NH3.**

 **b) SF6 exists but SH6 does not.**

 **c) ClF3 exists but FCl3 does not.**

 **d) H3PO3 is diprotic acid.**

 **e) ICl more reactive than I2. 5**

**30. a) An organic compound with the molecular formula C9H10O forms 2,4-DNP derivative,**

 **reduces Tollen’s reagent and undergoes Cannizaro reaction. On vigorous oxidation,**

 **it gives 1,2-benzene dicarboxylic acid. Identify the compound.**

 **b) Write the steps and conditions involved in the following conversions:**

 **i) Acetophenone to 2-phenyl-2-butanol.**

 **ii) Propene to acetone.**

 

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

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