

**SAMPLE PAPER-2013**  
**Class-XII**  
**Subject:-CHEMISTRY**

**Time-3 hrs**

**M.M- 70**

**GENERAL INSTRUCTIONS:**

- 1 All questions are compulsory.
2. Question number 1 to 8 are very short answer questions, carry 1 mark each.
3. Question number 9 to 18 are short answer questions, carry 2 marks each
- 4 Questions number 19 to 27 are also short answer questions, carry 3 marks each.
5. Question number 28 to 30 are long answer questions carry 5 marks.

1. Name the defect which decrease the density of crystal lattice ?
2. What is the effect of acidic medium on rusting ?
3. Why adsorption is always exothermic ?
4. Why  $\text{NCl}_5$  is not known ?
5. Write IUPAC name of the following compound:



6. Draw structure of 1-Bromo-4-sec. butyl-2-methylbenzene
7. Define essential amino acids ?
- 8 .Write monomer of nylon-6 ?
9. Explain osmotic pressure ? Why it is preferred to determine the molecular mass of macromolecules ?

OR

Why do we get abnormal molecular mass? Explain with example?

10. Write reactions of Primary cell at anode and cathode ?
11. The standard electrode potential for Daniell cell is 1.1V. Calculate the standard Gibbs energy for the reaction:



12. Answer the following:

- (i) Interhalogen compounds are more reactive than parent halogens ?
- (ii) Higher concentration of ozone act as explosive .?

- 13 . How will you prepare  $\text{KMnO}_4$  from pyrolusite ore ?
- 14 Explain mechanism of hydration of ethane in presence of sulphuric acid .?
15. Convert- (i) Ethyl chloride to propanoic acid (ii) But-1-ene to n-butyliodide

16. Explain (i) Although amino group is o- and p- directing in aromatic Electrophilic substitution reactions, aniline on nitration gives a substantial amount of m-nitroaniline.  
(ii) Aniline does not undergo Friedel-Crafts reaction
17. Explain with one example (i) Hofmann's bromamide and (ii) Ammonolysis Reaction.
18. Give the synthesis of one of the biodegradable polymer ? (2)
19. An element has a body-centred cubic structure with a cell edge Of 288 pm. The density of the element is  $7.2 \text{ g/cm}^3$ . How many atoms are present in 208 g of the element? (3)
20. The boiling point of benzene is 353.23 K. When 1.80 g of a non- volatile solute was dissolved in 90 g of benzene, the boiling point is raised to 354.11 K. Calculate the molar mass of the solute.  $K_b$  for benzene is  $2.53 \text{ K kg mol}^{-1}$  (3)

OR

A 5% solution (by mass) of cane sugar in water has freezing point of 271K. Calculate the freezing point of 5% glucose in water if freezing point of pure water is 273.15 K. (3)

21. Explain the following terms:(i) Electrophoresis (ii) Coagulation (iii) Dialysis (3)
22. (i) Why copper matte is put in silica lined converter?  
(ii) What is the role of cryolite in the metallurgy of aluminium?  
(iii) How is leaching carried out in case of low grade copper ores? (3)
23. Explain giving reason-  
(i) Transition metals and many of their compounds show paramagnetism.  
(ii) The enthalpies of atomisation of the transition metals are high.  
(iii) The transition metals generally form coloured compounds.
24. Discuss briefly giving an example in each case the role of coordination compounds in:  
(i) biological systems (ii) analytical chemistry (iii) medicinal chemistry (3)
25. How will you bring about the following conversions?  
(i) 2-Bromopropane to 1-bromopropane (ii) Chloroethane to butane  
(iii) Benzene to diphenyl (1x3)
26. Explain –  
(i) What are the different types of RNA found in the cell?  
(ii) Differentiate between globular and fibrous proteins ?  
(iii) What do you understand by the term glycosidic linkage? (1x3=3)

27. (i) Why are cimetidine and ranitidine better antacids than sodiumhydrogencarbonate or magnesium or aluminium hydroxide ?  
(ii) Name a substance which can be used as an antiseptic as well as disinfectant.  
(iii) What are the main constituents of dettol ? (1x3=3)
28. In a pseudo first order hydrolysis of ester in water, the following results were obtained:
- |                             |      |      |      |       |
|-----------------------------|------|------|------|-------|
| time /s                     | 0    | 30   | 60   | 90    |
| [Ester]/mol L <sup>-1</sup> | 0.55 | 0.31 | 0.17 | 0.085 |
- (i) Calculate the average rate of reaction between the time interval 30 to 60 seconds.  
(ii) Calculate the pseudo first order rate constant for the hydrolysis of ester? (5)
29. Assign reason for the following: (1x5)
- (i) How will you detect the presence of SO<sub>2</sub> gas ?  
(ii) Why NH<sub>3</sub> has high boiling point than PH<sub>3</sub> ?  
(iii) Why Cl<sub>2</sub> act as bleaching agent ?  
(iv) Why ozone act as oxidizing agent , give example ?  
(v) Why do noble gases have low boiling points ?
30. (a) Give chemical test to distinguish between Pentan-2-one and Pentan-3-one (1)  
(b) There are two -NH<sub>2</sub> groups in semicarbazide. However, only one is involved in the formation of semicarbazones.? (1)  
(c) An organic compound contains 69.77% carbon, 11.63% hydrogen and rest oxygen. The molecular mass of the compound is 86. It does not reduce Tollens' reagent but forms an addition compound with sodium hydrogensulphite and give positive iodoform test. On vigorous oxidation it gives ethanoic and propanoic acid. Write the possible structure of the compound (3)