

RM

XII - Std

## FIRST REVISION TEST - 2023

## CHEMISTRY

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Time : 3.00 Hrs

Marks : 70

## SECTION - I

Note: 1) Answer all the questions. 2) Choose the most suitable answer from the given four alternatives and write the option code and the corresponding answer :-  $15 \times 1 = 15$

- Which of the following is used for concentrating ore in metallurgy?  
a) Leaching                      b) Roasting                      c) Froth floatation                      d) Both (a) and (c)
- Which one of the following ions has the same number of unpaired electrons as present in  $V^{3+}$ ?  
a)  $Ti^{2+}$                       b)  $Fe^{3+}$                       c)  $Ni^{2+}$                       d)  $Cr^{3+}$
- Crystal field stabilization energy for high spin  $d^5$  octahedral complex is  
a)  $-0.6\Delta_o$                       b) 0                      c)  $2(P-\Delta_o)$                       d)  $2(P+\Delta_o)$
- Assertion : rate of reaction doubles when the concentration of the reactant is doubles if it is a first order reaction.  
Reason : rate constant also doubles  
a) Both assertion and reason are true and reason is the correct explanation of assertion.  
b) Both assertion and reason are true but reason is not the correct explanation of assertion.  
c) Assertion is true but reason is false.  
d) Both assertion and reason are false.
- Equal volumes of three acid solutions of pH 1, 2 and 3 are mixed in a vessel. What will be the  $H^+$  ion concentration in the mixture?  
a)  $3.7 \times 10^{-2}$                       b)  $10^{-6}$                       c) 0.111                      d) none of these
- In calcium fluoride, having the fluorite structure the coordination number of  $Ca^{2+}$  ion and  $F^-$  ion are  
a) 4 and 2                      b) 6 and 6                      c) 8 and 4                      d) 4 and 8
- Which one of the following will react with phenol to give salicylaldehyde after hydrolysis.  
a) Dichloro methane                      b) trichloroethane                      c) trichloro methane                      d)  $CO_2$
- The carbonyl compound used in the manufacture of Thermosoftening plastic perspex is  
a) Formaldehyde                      b) Acetaldehyde                      c) Benzaldehyde                      d) Acetone
- Match the following:  
A) Pure nitrogen.                      i) Chlorine  
B) Haber process.                      ii) Sulphuric acid  
C) Contact process.                      iii) ammonia  
D) Deacons Process.                      iv) sodium azide (or) Barium azide  
Which of the following is the correct option?  
a) A-i B-ii C-iii D-iv                      b) A-ii B-iv C-i D-iii                      c) A-iii B-iv C-ii D-i                      d) A-iv B-iii C-ii D-i
- When aniline reacts with acetic anhydride the product formed is  
a) o - aminoacetophenone.                      b) m-aminoacetophenone  
c) p - aminoacetophenone                      d) acetanilide,
- The number of  $sp^2$  and  $sp^3$  hybridised carbon in fructose are respectively  
a) 1 and 4.                      b) 4 and 2                      c) 5 and 1                      d) 1 and 5
- The medicinal value of drugs is measured in terms of its  
a) Deoxy ribose                      b) Gold number                      c) Therapeutic Index                      d) Equilibrium constant
- Laptops have  
a) Lead storage battery                      b) Fuel cell                      c) Mercury button cell                      d) Lithium ion battery

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14. Sodium salt of tetra boric acid is known as  
 a)  $B_2H_6$                       b)  $Na_2BO_3$                       c)  $H_3BO_3$                       d)  $Na_2B_4O_7 \cdot 10 H_2O$
15. The correct order of the thermal stability of hydrogen halide is  
 a)  $HI > HBr > HCl > HF$                       b)  $HF > HCl > HBr > HI$   
 c)  $HCl > HF > HBr > HI$                       d)  $HI > HCl > HF > HBr$

## SECTION – II

Answer any six questions and question number 23 is compulsory :-

6 X 2 = 12

16. Give the basic requirement for vapour phase refining.  
 17. Write the electronic configuration of  $Ce^{4+}$  and  $Co^{2+}$ .  
 18. Give an example of coordination compound used in medicine an example of biologically important coordination compounds.  
 19. Distinguish tetrahedral and octahedral voids.  
 20. What do you mean by Buffer solution.  
 21. What is called as Brownian movement.  
 22. Write Riemer Tiemann reaction.  
 23. Account for the following Ethylamine is soluble in water whereas aniline is not  
 24. Write a short note on peptide bond

## SECTION – III

Answer any six questions and question number 29 is compulsory :-

6 x 3 = 18

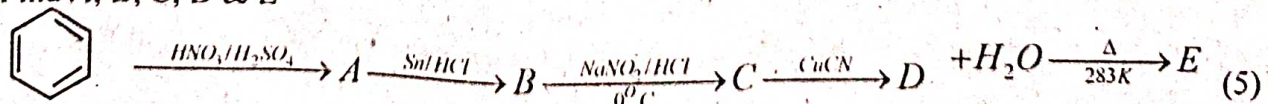
25. How will you identify borate radical?  
 26. What are the effects of lanthanide contraction?  
 27. In an octahedral crystal field, draw the figure to show splitting of d orbitals.  
 28. Show that in case of first order reaction, the time required for 99.9% completion is nearly ten times the time required for half completion of the reaction.  
 29. Ionic conductance at infinite dilution of  $Al^{3+}$  and  $SO_4^{2-}$  are 189 and 160 mho  $cm^2 equiv^{-1}$ . Calculate the equivalent and molar conductance of the electrolyte  $Al_2(SO_4)_3$  at infinite dilution.  
 30. Describe some feature of catalysis by Zeolites.  
 31. How will you distinguish primary, secondary and tertiary alcohol using Lucas test.  
 32. Explain the mechanism of Cannizzaro reaction.  
 33. What are food preservatives?

## SECTION – D

Answer all the questions :-

5 x 5 = 25

34. (i) Explain the following terms with suitable examples. (i) Gangue (ii) slag (2)  
 (ii) Explain zone refining process with an example. (3) (OR)  
 (iii) Give the uses of silicones. (2) (iv) Describe the structure of diborane. (3)  
 35. (i) What are interhalogen compounds? Give examples. (2)  
 (ii) Explain the bleaching action of  $SO_2$ . (3) (OR)  
 Write the postulates of Werner's theory. (5)  
 36. Differentiate crystalline solids and amorphous solids. (5) (OR)  
 (iii) Define solubility product (2)  
 (iv) Identify the conjugate acid base pair for the following reaction in aqueous solution. (3)  
 i)  $HS^-(aq) + HF \rightleftharpoons F^-(aq) + H_2S(aq)$   
 ii)  $NH_4^+CO_3^{2-} \rightleftharpoons NH_3 + HCO_3^-$   
 37. (i) Describe the construction of Daniel cell. Write the cell reaction. (3)  
 (ii) Is it possible to store copper sulphate in an iron vessel for a long time.  
 Given :  $E_{Cu^{2+}/Cu}^0 = 0.34V$  and  $E_{Fe^{2+}/Fe}^0 = -0.44V$  (OR)  
 (iii) Write a note on electro osmosis (2) (iv) Write a note on catalytic poison with an example (3)  
 38. Find A, B, C, D & E



- (OR) (i) Write a note on denaturation of proteins (2)  
 (ii) How do antiseptics differ from disinfectants? (3)