



Code Number:

**A****Aakash****Medical | IIT-JEE | Foundations**

Corp. Office: Aakash Educational Services Limited, 3rd Floor, Incuspaze Campus- 2,  
Plot No. 13, Sector- 18, Udyog Vihar, Gurugram, Haryana - 122015

Time: 3 hrs.

**Mock Test Paper for Class-XII**

Max. Marks: 70

**CHEMISTRY**

Roll No.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

**GENERAL INSTRUCTIONS**

Read the following instructions carefully and follow them:

1. The Question paper consists of parts **I, II, II, and IV**
2. **Part - I** consists of **15 Multiple choice** questions,
3. **Part - II** consists of **9 short answer type** questions carrying **2 marks** each, out of which **6 questions** to be answered
4. **Part - III** consists of **9 short answer type** questions carrying **3 marks** each, out of which **6 questions** to be answered
5. **Part - IV** consists of **5 long answer type** questions carrying **5 marks** each, answer all the questions.
6. Use Blue or Black ink to write and underline and pencil to draw diagrams.
7. Choose the most appropriate answer from the given four alternatives and write the option code and the corresponding answer.

PART-I

I. Answer all the questions

15 x 1 = 15

- The rate constant of a reaction is  $5.8 \times 10^{-2} \text{ s}^{-1}$ . The order of the reaction is:
  - Second order
  - First order
  - Third order
  - Zero order
- Aspirin is:
  - chlorobenzoic acid
  - acetyl salicylic acid
  - anthranilic acid
  - benzoyl salicylic acid
- In acid medium, potassium permanganate oxidizes oxalic acid to:
  - acetate
  - oxalate
  - acetic acid
  - carbon dioxide
- IUPAC name of the complex  $\text{K}_3[\text{Al}(\text{C}_2\text{O}_4)_3]$  is:
  - Potassium trisoxalato aluminate (III)
  - Potassium trioxalato aluminium (III)
  - Potassium trioxalato aluminate (III)
  - Potassium trioxalato aluminate (II)
- Among the following which will not be hydrolysed?
  - Sodium Chloride
  - Sodium Formate
  - Ammonium Formate
  - Ammonium Nitrate
- Among the following cells primary cells are:
  - Leclanche cell
  - Nickel-Cadmium cell
  - Lead Storage Battery
  - Mercury cell
  - (iii) and (iv)
  - (i) and (iv)
  - (ii) and (iii)
  - (i) and (iii)
- In the electrolytic refining of copper, which one of the following is used as anode?
  - Carbon rod
  - Pure copper
  - Platinum electrode
  - Impure copper
- Assertion** : Monoclinic sulphur is an example of monoclinic crystal system.  
**Reason**: For a monoclinic system,  $a \neq b \neq c$  and  $\alpha = \gamma = 90^\circ$ ,  $\beta \neq 90^\circ$ .
  - Assertion** is true but **Reason** is false.
  - Both **Assertion** and **Reason** are true and **Reason** is the correct explanation of **Assertion**.
  - Both **Assertion** and **Reason** are false.
  - Both **Assertion** and **Reason** are true, but **Reason** is not the correct explanation of **Assertion**.

9. The formation of cyanohydrin from acetone is an example of:
- (a) electrophilic addition (b) nucleophilic substitution  
(c) nucleophilic addition (d) electrophilic substitution
10. Which of the following is not  $sp^2$  hybridised?
- (a) Fullerene (b) Graphite  
(c) Dry ice (d) Graphene
11. The oxidising agent used to stop the oxidation of primary alcohol at the aldehyde stage is:
- (a)  $Na_2Cr_2O_7$  (b)  $KMnO_4$   
(c)  $K_2Cr_2O_7$  (d) PCC
12. Which of the following is the strongest acid among all?
- (a) HBr (b) HI  
(c) HCl (d) HF
13. When aniline reacts with acetic anhydride, the product formed is:
- (a) p-aminoacetophenone (b) o-aminoacetophenone  
(c) acetanilide (d) m-aminoacetophenone
14. The pyrimidine bases present in RNA are:
- (a) Cytosine and Thiamine (b) Cytosine and Adenine  
(c) Cytosine and Uracil (d) Cytosine and Guanine
15. Activity of iron catalyst is increased by the \_\_\_\_\_ compound.
- (a)  $CH_3COOH$  (b)  $H_2S$   
(c)  $Al_2O_3$  (d)  $As_2O_3$

### PART-II

**Answer any SIX of the following questions. Question No. 24 is compulsory**

**6 x 2 = 12**

16. What is Calcination?
17. How will you convert boric acid to boron nitride?
18. Sulphuric acid is a dehydrating agent. Justify with an example.
19. Explain common ion effect with an example.
20. Can  $Fe^{3+}$  oxidise bromide to bromine under Standard Conditions?  
Given :  $E^\circ_{Fe^{3+} | Fe^{2+}} = 0.771 V$   
 $E^\circ_{Br_2 | Br^-} = 1.09 V$
21. Write Kolbe's reaction.

22. Write the structure of the following:  
 $\alpha$  – D - glucopyranose and  
 $\beta$  – D - glucopyranose
23. What are antibiotics?
24. What is an order of a reaction?
25. Give the uses of helium.
26. Which is more stable  $\text{Fe}^{3+}$  or  $\text{Fe}^{2+}$ ? Why?

**PART-III**

**Answer any SIX of the following questions. Question No. 33 is compulsory**

**6 x 3 = 18**

27. Aluminium crystallizes in a cubic close packed structure. Its metallic radius is 125 pm. Calculate the edge length of unit cell.
28. Write Arrhenius equation and explain the terms involved.
29. Explain the effect of temperature and pressure on physisorption and chemisorption.
30. Explain Knoevenagel reaction.
31. Write the reaction of primary amine with Carbon disulphide ( $\text{CS}_2$ ).
32. Write a short note on peptide bond.
33. In the complex,  $[\text{Co}(\text{CN})_2 \text{Cl}_2] \text{Cl}$ , identify the following.
- (i) IUPAC name
  - (ii) Central metal ion
  - (iii) Co-ordination number

**PART-IV**

**Answer all the questions.**

**5 x 5 = 25**

34. (a) (i) What are the differences between minerals and ores?  
(ii) What is the role of silica in the extraction of copper?  
**(OR)**
- (b) (i) Give the uses of Boric acid.  
(ii) What are silicates?
35. (a) What is Lanthanoid Contraction and what are the consequences of Lanthanoid Contraction?  
**(OR)**
- (b) (i) Write a short notes on double salts and co-ordination compounds.  
(ii) Give an example of Coordination Compound used in medicine and a biologically important Coordination Compound.

36. (a) Calculate the percentage efficiency of packing in case of simple cubic crystal.

(OR)

(b) (i) Derive the integrated rate law for a Zero order reaction,  $A \rightarrow \text{product}$ .

(ii) Define buffer Index.

37. (a) (i) Explain about Galvanic cell notation.

(ii) Define gold number.

(OR)

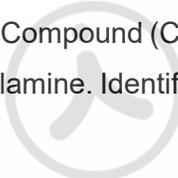
(b) Write notes on Lucas Test.

38. (a) (i) How acetic acid is prepared from Grignard reagent?

(ii) What are bio-degradable polymers? Give an example.

(OR)

(b) An organic Compound (A) of molecular formula  $C_2H_4O$  reacts with Zn-Hg / Conc. HCl to give Compound (B) which reacts with  $HNO_3$  forming Compound (C) (as major product) and Compound (D). Compound (C) reacts with conc. HCl to give Compound (E) (Table vinegar) and hydroxylamine. Identify A, B, C, D and E with suitable reactions.

  
**Aakash**  
Medical | IIT-JEE | Foundations