

# CLASS XII GUESS PAPER CHEMISTRY

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TIME : 3 HRS

MM - 70

INSTRUCTIONS

1. ALL QUESTIONS ARE COMPULSORY.
2. There are 27 questions. However, internal choices are given.

Question no1 to 5 carry 1 mark each.

Question no 6 to 13 carry 2 marks each.

Question no 14 to 23 carry 3 marks each.

Question no 24 carries 4 marks.

Question no 25 to 27 carry 5 marks each.

1. What is called sorption ? [1]
2. Write the IUPAC structure of the following compound . [1]  
2-Bromo-3-oxopentanoic acid
3. Chlorine has bleaching property. Explain. [1]
4. Which aliphatic aldehyde will not respond to Iodoform test ? [1]

5. Arrange the basicity of the following amines in increasing order : [1]  
 $\text{CH}_3\text{NH}_2$ ,  $(\text{CH}_3)_2\text{NH}$  and  $(\text{CH}_3)_3\text{N}$  ( in aqueous solution)
6. a) Distinguish between physisorption and chemisorptions ( any two) [2]  
b) How does chemisorption vary with temperature?( Write graphical representation.)
7. An element crystallizes in a structure having a fcc unit cell of an edge of 200 pm. Calculate its Density if 200 gm of this element contain  $24 \times 10^{23}$  atoms. [2]
8. Write short notes on the following : [2]  
a) Broad spectrum antibiotics , b) Antihistamines .
9. a) Distinguish between Frenkel and Schottky defect . [2]  
b) What is called doping? How is it created?
10. Write short notes on : [2]  
a) Swarts reaction ,  
b) Chirality .
11. a) Out of the noble gases , Xenon form only stable compounds. Explain. [2]  
b) Give the disproportionation reaction of  $\text{H}_3\text{PO}_3$ .
12. a) Why is the melting point of p-dichlorobenzene higher than that of o-and m- isomers? [2]  
b) Why is a racemic mixture treated as an optically inactive compound ?

OR

i) Under drastic conditions haloarenes are substituted but in presence of electron withdrawing group nucleophilic substitution become easier. Explain. [2]

ii) Which out of the two halides can easily be substituted and why ?

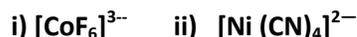


13. a) Distinguish between order and molecularity of a reaction. [2]

b) What do you mean by the term orientation factor, P, with respect to collision theory ?

14. With the help of Valence Bond theory predict the shape, magnetic moment and hybridization

Of the following compounds : [3]



15.a) Although electron gain enthalpy of fluorine is less negative than chlorine, fluorine is the stronger oxidizing agent than chlorine. Explain. [3]

b) Account for the basicity of  $\text{H}_3\text{PO}_4$  and  $\text{H}_3\text{PO}_2$ . Which one is stronger acid and why?

c)  $\text{PCl}_5$  is covalent in the gaseous state but it is ionic in the solid state. Why?

16 For the reaction,  $2 \text{NO} + \text{Cl}_2 \longrightarrow 2 \text{NOCl}$ , it is found that doubling the concentration of both the reactants increases the rate by 8 times, but doubling the concentration of chlorine alone, reaction rate increases by 2 times. What is the overall order of reaction? [3]

17. a) What is the principle of zone refining? [3]

b) How would you prepare blister copper from copper matte?

c) What is meant by electrometallurgy?

18.a) Aldehydes are more reactive towards nucleophilic substitution reaction than ketone. Explain.

[3]

b) Write a short note on Wolff- Kishner reduction.

c) Carboxylic acid is a stronger acid than phenol. Explain.

19. Distinguish between:

[3]

i) a)  $1^\circ$  and  $2^\circ$  amine .

b) Aniline and ethylamine .

ii) Acetylation of aniline is required to get p-bromoaniline from aniline. Explain.

20. a) Why is vulcanization of rubber required ?

[3]

b) What is Buna-N ? Write its uses.

c) What is the difference between thermoplastic and thermosetting polymers ?

21. a) Write the mechanism of the following reaction :

[3]



b) What is the function of  $\text{ZnCl}_2$  in Lucas test ?

22. How would you carry out the following conversions :-

[3]

a) Phenol to anisole.

b)  $1^\circ$  alcohol to  $2^\circ$  alcohol .

c) Benzaldehyde to benzophenone.

23. Write short notes on :

[3]

- a) HVZ reaction.
- b) Cannizzaro reaction ,
- c) Aldol condensation.

24. Malnutrition is a serious concern to school going children .It is very much required to conduct awareness programme in different schools. Suggest some steps to minimize this malnutrition. [4]

25. a) The conductivity of 0.001028 mol/lit acetic acid is  $4.95 \times 10^{-5} \text{ S cm}^{-1}$ . Calculate its dissociation constant if  $\Lambda_m^0$  for acetic acid is  $390.5 \text{ S cm}^2 \text{ mol}^{-1}$ . [5]

b) Calculate the potential of hydrogen electrode in connect with a solution whose pH is 10.

OR

i) What is the value of  $K_c$  for the following reaction at  $25^\circ\text{C}$ ? [5]



$$E_{\text{Cu}^{+2}/\text{Cu}}^0 = 0.34 \text{ volt} , E_{\text{Sn}^{+4}/\text{Sn}^{+2}}^0 = 0.15 \text{ volt.}$$

ii) What are the advantages of using a fuel cell ?

26. a) The trend of  $E_M^{+2}/M$  value for the first transition series are irregular. Explain.

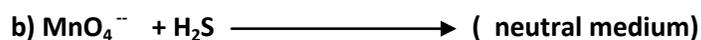
b) Lanthanides show a limited range of oxidation states but actinides show a wide variety of oxidation states. Explain.

c) Elements of first 3d, 4d and 5d series exhibit complex compounds. Account for this.

d) How would you prepare  $K_2Cr_2O_7$  from chromate ore?

**OR**

i) Balance the equations :



ii) Most of the tri-positive ions of lanthanoids are coloured. Explain.

iii) Melting point of Mn is too low though it has  $d^5$  unpaired electrons . Explain.

iv) Nature of oxides of first 3d series vary .Explain.

27. i) What are meant by positive and negative deviation from Raul's law ? Explain with graph. [5]

ii) 100 gm liquid A (molar mass 140) is dissolved in 1000 gm of liquid B (molar mass 180). The vapour pressure of pure liquid B is found to be 500 torr.calculate the vapour pressure of pure liquid A and its vapour pressure pressure in the solution if the total vapour pressure of the solution is 473 torr.

**OR**

Complete the following equations :

[5]



iv) Write a short note on brown ring test with equation.