

CAREERS 360

JKBOSE CLASS 12th CHEMISTRY

MODEL QUESTION PAPER

**The Jammu and Kashmir State Board of School Education
Academic Division New Campus, Bemina, Srinagar**

Model Paper

CHEMISTRY(12th)

Max Marks: 70

Time: 3Hrs

SECTION A

Long Answer Type Questions:

1. What is solubility? Explain the effect of temperature and pressure on the solubility of gases in liquids.

OR

What is colligative property? How is the molecular mass of a solute calculated from elevation in boiling point? 1 gms of a non-electrolyte solute dissolved in 50g of benzene lowered the freezing point of benzene by 0.40 K. The K_b value of benzene 5.12 KKgmol^{-1} . Find the molar mass of the solute. **5 marks**

2. Why molar conductivity of weak electrolytes cannot be calculated from extrapolation method? Explain how the molar conductivity of weak electrolytes is calculated from Kohlrauch's law?

OR

Depict a galvanic cell in which the reaction is



- (i) Which of the electrodes is negatively charged?
- (ii) What are the carriers of current in the cell?
- (iii) What is the individual reaction at each electrode?
- (iv) What are the functions of salt bridge? **5 marks**

3. Name the oxoacids of Phosphorus. Predict their basicity form their structure. Which of the two H_3PO_3 and H_3PO_4 is stronger?

OR

What are interhalogens? How are they produced? Give the structure of IF_7 . **5marks**

4. How will you distinguish between?

- (i) Ethanol and acetone
- (ii) acetaldehyde and benzaldehyde
- (iii) Tollen's and Fehling's test?

OR

Describe the following.

- (i) Cannizaro's reaction
- (ii) Aldol condensation
- (iii) Cross Aldol condensation **5marks**

SECTION B

Short Answer Type Questions:

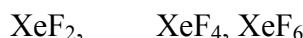
5. In a solid, there is defect due to missing of equal number of opposite ions from normal lattice site. **3 marks**

(i) Which type of point defect is it?
(ii) What are the effects of this defect on the density and stability of such solids?
(iii) Name a solid which can have such defect.

6. What is meant by reaction rate? Give symbolic expression and units for the reaction **3 marks**



7. Write the hybridization and also draw the molecular structure of following. **3 marks**



8. Briefly describe Freundlich adsorption isotherm. **3 marks**

9. How pure alumina is prepared from bauxite in Baeyer's process? Give the reaction of each step. **3 marks**

10. Atomic radius of Cu is greater than Cr but ionic radius of Cr^{2+} is greater than Cu^{2+} . Why? **3 marks**

11. How will you distinguish between 1^0 , 2^0 and 3^0 alcohols by Victor Meyer's method? **3 marks**

12. Amines are basic in nature. Justify. **3 marks**

SECTION C

Very Short Answer Type questions:

13. Freons cause destruction of ozone layer. Explain. **2 marks**

14. Why CN^- and SCN^- are known as Ambident ligands? What type of isomerism is caused by such ligands? **2 marks**

15. Give cyclisation of Glucose. **2 marks**

16. What are fat soluble and water soluble vitamins? **2 marks**

17. Explain $\text{SN}2$ mechanism in alkyl halides. **2 marks**

18. What happens to natural rubber when it is heated with sulphur? What is the process known as? **2 marks**

19. What are antibiotics and antipyretics? Give Example? **2 marks**
20. What is lanthanide contraction? How it is caused? **2 marks**

SECTION A

Very Short Answer Type Questions

21. What is the effect of mechanical pressure on a piezoelectric crystal? **1 mark**
22. Give the units of zero order reaction. **1 mark**
23. What is CMC? **1 mark**
24. What is the coordination number of central metal atom in $[\text{Fe}(\text{C}_2\text{O}_4)_3]^{3-}$? **1 mark**



26. Give the reaction for converting acid chlorides to corresponding aldehydes.
Name the reaction. **1 mark**

27. Name one biodegradable polymer. **1 mark**
28. The correct structure of drug paracetamol is **1 mark**

(i)



(ii)



(iii)



(iv)



29. A first order reaction is 75% complete after 32 minutes. When 50% of the reaction was complete? **1 mark**

(i) 4 minutes
 (ii) 8 minutes
 (iii) 16 minutes
 (iv) 32 minutes

30. Which of the following is the most basic compound. **1 mark**

(i) Benzalamine
 (ii) Aniline
 (iii) Acidamide
 (iv) Para nitro aniline