

# CAREERS360

## JKBOSE CLASS 12<sup>th</sup> CHEMISTRY

### MODEL QUESTION PAPER

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

**Model Paper**

**CHEMISTRY(12<sup>th</sup>)**

**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  $5.12 \text{ K Kg mol}^{-1}$ . 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 Kohlrausch'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 from their structure. Which of the two  $\text{H}_3\text{PO}_3$  and  $\text{H}_3\text{PO}_4$  is stronger?

**OR**

What are interhalogens? How are they produced? Give the structure of  $\text{IF}_7$ . **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) Cannizzaro'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**
- $$\text{CO (g)} + \text{NO}_2 \text{ (g)} \xrightarrow{\square} \text{CO}_2 \text{ (g)} + \text{NO (g)}$$
7. Write the hybridization and also draw the molecular structure of following. **3 marks**
- $\text{XeF}_2, \quad \text{XeF}_4, \text{XeF}_6$
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  $\text{Cr}^{2+}$  is greater than  $\text{Cu}^{2+}$ . Why? **3 marks**
11. How will you distinguish between  $1^\circ$ ,  $2^\circ$  and  $3^\circ$  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  $\text{CN}^-$  and  $\text{SCN}^-$  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  $\text{S}_\text{N}2$  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**

25.  $\text{RX} + \text{NaOR} \xrightarrow{\quad} \quad + \quad$  **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**

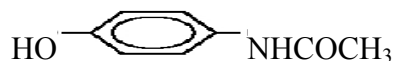
28. The correct structure of drug paracetamol is

**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