

# CBSE Sample Paper Class 12 Chemistry Set 3

CLASS XII  
Chemistry

Time allowed: 3 Hours

Max. Marks: 70

## General Instructions:

- All questions are compulsory
- Section A: Q.no. 1 to 5 are very short questions and carry 1 mark each.
- Section B: Q. no. 6 to 12 are short answer questions and carry 2 marks each.
- Section C: Q. no. 13 to 24 are also short answer questions and carry 3 marks each.
- Section D: Q. no. 25 to 27 are long answer questions and carry 5 marks each.
- There is no overall choice. However, an internal choice has been provided in two questions of one mark, two questions of two marks, four questions of three marks and all the three questions of five marks weightage. You have to attempt only one of the choices in such questions.
- Use of log tables if necessary, use of calculators is not allowed.

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## Section A (1 mark each)

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**Q#1:** Give 2 Properties of Hydrogen-Bonded molecular solids.

**Q#2:** Define the term 'Mole fraction'.

(OR)

Define Mass Percentage of a component.

**Q#3:** Give 2 factors on which the conductivity of electrolytic solutions is dependent.

**Q#4:** Write the chemical reaction for the enzyme-catalyzed inversion of cane sugar.

**Q#5:** What are the products formed when phenol is heated with zinc dust?

(OR)

Give 2 Methods for the preparation of phenol.

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## Section B (2 marks each)

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**Q#6:** How is the solubility of solids in liquids affected by

(i) temperature, and (ii) pressure.

**Q#7:** What is Reverse Osmosis?

**Q#8:** Name 2 methods of preparing haloalkanes with examples.

**Q#9:** What are Grignard reagents? Give a chemical reaction for their preparation.

**Q#10:** What is a Polyhalogen compound? Give 2 examples.

**Q#11:** What are the categories polymers into which can be classified based on the source?

**(OR)**

What are the categories into which polymers can be classified based on their structure?

**Q#12:** What are Tranquilizers? What are their uses?

**(OR)**

What are Analgesics? What are their uses?

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### Section C (3 marks each)

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**Q#13:** Obtain the total number of atoms in (i) primitive unit cell (ii) Body-centered cubic unit cell (iii) Face-centered cubic unit cell.

**(OR)**

Calculate the packing efficiency in BCC structures.

**Q#14:** the electrical resistance of a sodium hydroxide cylinder is  $5.55 \times 10^3$  ohms. Given its diameter is 2 cm and its length is 100 cm, find its resistivity and conductivity.

**(OR)**

What is a battery? Give two differences between primary and secondary batteries.

**Q#15:** Give 3 differences between adsorption and absorption.

**(OR)**

State any two properties of colloidal solutions.

**Q#16:** Briefly explain any three methods for the refining of metals.

(OR)

Briefly explain any three procedures used in the concentration of metal ores.

**Q#17:** Write any three methods to prepare dinitrogen. Give reactions for each method written.

**Q#18:** What are the types of isomerism in coordination compounds? Describe each type.

**Q#19:** Describe (i) Kolbe's Reaction, (ii) Reimer-Tiemann reaction. Provide example reactions.

**Q#20:** What is (a) Stephen reaction (b) Rosenmund reduction? Provide reactions for both.

**Q#21:** Give any two methods of preparing ketones. Provide reactions for each.

**Q#22:** What is (i) Gabriel phthalimide synthesis (ii) Hoffmann bromamide reaction? Provide reactions for each.

**Q#23:** Briefly describe the three categories into which carbohydrates can be classified.

**Q#24:** Write short notes on: (i) enzymes (ii) vitamins.

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### Section D (5 marks each)

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**Q#25:** What is Half-Life of a reaction? Obtain the relation between the rate constant and half-life of zero order and first order reactions.

(OR)

**Q#25:** (i) What are the factors that influence the rate of a reaction?

(ii) what is the rate determining step of a reaction?

(iii) What is the rate law? Give its expression.

**Q#26:** Give (i) 2 Methods for the preparation of Nitric acid, and (ii) 3 properties of Nitric acid

(OR)

**Q#26:** What are Halogens? Write short notes on (i) Electronic Configuration, (ii) Atomic and Ionic Radii, (iii) Enthalpy of Ionization and (iv) Electronegativity of Halogens.

**Q#27:** Write short notes on (i) Physical properties of d block elements, (ii) ionization enthalpies of d block elements, and (iii) oxidation states of d block elements.

**(OR)**

**Q#27:** What are Lanthanides and Actinides? Give 3 differences between them.

