

Hsc Chemistry Past Papers With Solutions

STD XII - CHEMISTRY

Time : 3 hrs.]

MARCH - 2013

[Marks : 70]

SECTION - I

Q. 1. Select and write the most appropriate answers from the given alternatives for each sub-question :

[7]

- In body centred cubic structure the space occupied is about _____
(a) 68% (b) 53% (c) 38% (d) 32%
- For a gaseous reaction the unit of rate of reaction is _____
(a) L atm s^{-1} (b) $\text{atm mol}^{-1} \text{s}^{-1}$ (c) atm s^{-1} (d) mol s
- Which of the following compounds contains S = O as well as S = S bonds?
(a) Sulphuric acid (b) Thiosulphuric acid
(c) Sulphurous acid (d) Thiosulphurous acid
- Which of the following solutions shows maximum depression in freezing point ?
(a) 0.5 M Li_2SO_4 (b) 1 M NaCl (c) 0.5 M $\text{Al}_2(\text{SO}_4)_3$ (d) 0.5 M BaCl_2
- For a chemical reaction $dS = -0.035 \text{ kJ/K}$ and $dH = -20 \text{ kJ}$. At what temperature does the reaction turn nonspontaneous?
(a) 5.14 K (b) 57.14 K (c) 571.4 K (d) 5714.0 K
- The standard e.m.f. of the following cell is 0.463 V

$$\text{Cu(s)} \mid \text{Cu}^{++}_{(aq)} \parallel \text{Ag}^{++}_{(aq)} \mid \text{Ag(s)}$$
 (1M) (1M) . What is the standard potential of Cu electrode ?
(a) 1.137 V (b) 0.337 V (c) 0.463 V (d) -0.463 V
- Fe_2O_3 is reduced to spongy iron near the top of blast furnace by _____
(a) H_2 (b) CaO (c) SiO_2 (d) CO

Q. 2. Answer any SIX of the following :

[12]

- Distinguish between crystalline solid and amorphous solid.
- State Kohlrausch Law and write mathematical expression of molar conductivity of the given solution at infinite dilution.
- Write cell reactions in lead storage battery during discharge.
- Draw structures and write geometry of PCl_3 and PCl_5 .
- Prove that $\Delta H = \Delta U + \Delta nRT$. What is the condition under which $\Delta U = \Delta H$?
- Mention names and formulae of two ores of aluminium.
- Derive the relationship between relative lowering of vapour pressure and molar mass of nonvolatile solute.
- What is pseudo first order reaction? Give one example of it.

Q. 3. Answer any THREE of the following :

[9]

- Calculate the mole fraction and molality of HNO_3 in a solution containing 12.2% HNO_3 . (Given - atomic masses : H = 1, N = 14, O = 16)
- Consider the reaction -



What are the values of the following at the same time ?

- $-\frac{d[\text{I}^-]}{dt}$
- $-\frac{d[\text{S}_2\text{O}_8^{2-}]}{dt}$
- $-\frac{d[\text{I}_3^-]}{dt}$

HSC chemistry past papers with solutions are invaluable resources for students preparing for the Higher School Certificate (HSC) examinations in New South Wales, Australia. Chemistry, being a complex and intricate subject, requires a solid understanding of concepts, and past papers are an excellent way to gauge comprehension and exam readiness. In this article, we will delve into the significance of HSC chemistry past papers, how to effectively use them, and provide strategies for maximizing their benefits. Additionally, we will explore some common topics covered in these past papers and how solutions can enhance the learning experience.

Understanding the Importance of Past Papers

Past papers serve several critical functions in the preparation process for HSC chemistry exams:

1. Familiarization with Exam Format

HSC chemistry past papers expose students to the format of the exam, which can vary from year to year. Understanding the structure helps students:

- Recognize the types of questions commonly asked.
- Develop familiarity with multiple-choice, short answer, and extended response questions.
- Learn the marking criteria, which aids in understanding how answers are evaluated.

2. Identifying Key Topics

Through the analysis of past papers, students can identify recurring themes and topics that frequently appear in exams. This can guide their study focus. Key areas often include:

- Atomic structure
- Chemical bonding
- Stoichiometry
- Thermodynamics
- Equilibrium
- Organic chemistry

3. Self-Assessment and Improvement

Working through past papers allows students to assess their knowledge and identify areas where they may need additional study or practice. By reviewing their performance on past papers, students can:

- Track their progress over time.
- Identify specific weaknesses in their understanding of chemistry concepts.
- Develop strategies for improvement based on past performance.

How to Effectively Use HSC Chemistry Past Papers

To make the most out of HSC chemistry past papers, students should adopt strategic approaches:

1. Schedule Regular Practice

Establish a study schedule that incorporates regular practice with past papers. Consider the following:

- Dedicate specific times each week to work on past papers.
- Alternate between different years to experience a broad range of questions.

- Time yourself to simulate actual exam conditions.

2. Review and Analyze Solutions

Simply attempting the past paper questions isn't enough; reviewing the solutions is equally important. This process involves:

- Checking answers against official solutions to identify discrepancies.
- Understanding the rationale behind each solution, especially for complex problems.
- Noting common mistakes and learning from them to avoid repetition.

3. Group Study Sessions

Studying in groups can be beneficial for discussing and solving past paper questions. Benefits of group study include:

- Sharing different approaches to solving problems.
- Clarifying doubts by discussing challenging questions with peers.
- Encouraging motivation and accountability among group members.

Common Topics in HSC Chemistry Past Papers

A thorough understanding of common topics can bolster confidence and preparedness for the HSC chemistry exam. Here are some frequently examined areas:

1. Atomic Structure

Questions related to atomic structure often involve:

- Electron configurations
- Isotopes and their applications
- Periodic trends (ionization energy, electronegativity)

2. Chemical Reactions and Stoichiometry

Students should be prepared to tackle:

- Balancing chemical equations
- Calculating moles and molar mass
- Yield calculations and limiting reactants

3. Thermodynamics and Kinetics

Key areas include:

- Enthalpy changes (exothermic and endothermic reactions)
- Activation energy and factors affecting reaction rates
- Equilibrium constants and Le Chatelier's principle

4. Organic Chemistry

A significant portion of HSC chemistry involves organic compounds. Students should study:

- Functional groups and their reactions
- Isomerism (structural and stereoisomerism)
- Reaction mechanisms and synthesis pathways

Benefits of Solutions to Past Papers

Solutions to past papers offer numerous advantages that enhance the learning experience:

1. Clarification of Concepts

Solutions provide detailed explanations that can clarify complex concepts. They often break down the steps required to arrive at the correct answer, which helps in understanding the underlying principles.

2. Learning the Marking Criteria

By studying how marks are allocated in the solutions, students can learn how to structure their responses to maximize scoring potential. This is particularly important for extended response questions that require detailed explanations.

3. Building Confidence

Working through past papers and reviewing solutions can build a student's confidence in their knowledge and test-taking abilities. As students become more familiar with the types of questions and the level of difficulty, they can approach the exam with greater assurance.

Where to Find HSC Chemistry Past Papers and Solutions

Several resources are available for students seeking HSC chemistry past papers and solutions:

1. Official Education Websites

The New South Wales Education Standards Authority (NESA) provides access to past papers and marking guidelines on their official website. This is a reliable source for authentic materials.

2. Study Guides and Revision Books

Many publishers produce study guides that include past papers along with worked solutions. These can be purchased online or at educational bookstores.

3. Online Forums and Study Groups

Platforms such as forums or social media groups dedicated to HSC students often share past papers and solutions. Joining these communities can provide additional resources and support.

Conclusion

In conclusion, HSC chemistry past papers with solutions are essential tools for students aiming to excel in their chemistry examinations. By familiarizing themselves with the exam format, identifying key topics, and incorporating strategic study methods, students can significantly enhance their understanding and performance. Reviewing solutions not only clarifies concepts but also builds confidence and prepares students for success. As they embark on their study journey, leveraging these resources will undoubtedly aid in achieving their desired outcomes in the HSC chemistry exam.

Frequently Asked Questions

What are HSC Chemistry past papers with solutions?

HSC Chemistry past papers with solutions are previous examination papers from the Higher School Certificate (HSC) Chemistry course that include detailed answers and explanations for each question, helping students to understand the material and improve their exam performance.

How can I access HSC Chemistry past papers with solutions?

HSC Chemistry past papers with solutions can be accessed through various educational websites, school resources, and online databases specifically dedicated to past examination papers and study materials.

Why are HSC Chemistry past papers important for exam preparation?

HSC Chemistry past papers are important for exam preparation because they provide insight into the types of questions that may appear on the exam, help students practice their time management skills, and allow for self-assessment of knowledge and problem-solving abilities.

Are solutions provided for all HSC Chemistry past papers?

Not all HSC Chemistry past papers come with solutions. However, many educational platforms and resources provide solutions for a significant number of past papers to aid students in their revision.

How can I effectively use HSC Chemistry past papers with solutions for study?

To effectively use HSC Chemistry past papers with solutions for study, students should attempt the questions under timed conditions, review their answers against the provided solutions, and focus on understanding any mistakes to reinforce their knowledge.

What topics are commonly covered in HSC Chemistry past papers?

Common topics covered in HSC Chemistry past papers include chemical reactions, stoichiometry, equilibrium, thermodynamics, organic chemistry, and analysis of data from experiments.

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