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› PW EaJEE Handwritten Notes for Organic Chemistry JEE Main & Advanced Manual

Physics Wallah EaJEE Handwritten Notes Organic Chemistry

PW EaJEE Handwritten Notes for Organic Chemistry JEE Main & Advanced

Instruction Manual

1. PRODUCT OVERVIEW

The PW EaJEE Handwritten Notes for Organic Chemistry is a comprehensive study resource designed for students preparing for the JEE Main & Advanced examinations. This book provides detailed explanations, extensive practice questions, and revision aids to facilitate understanding and mastery of Organic Chemistry concepts.

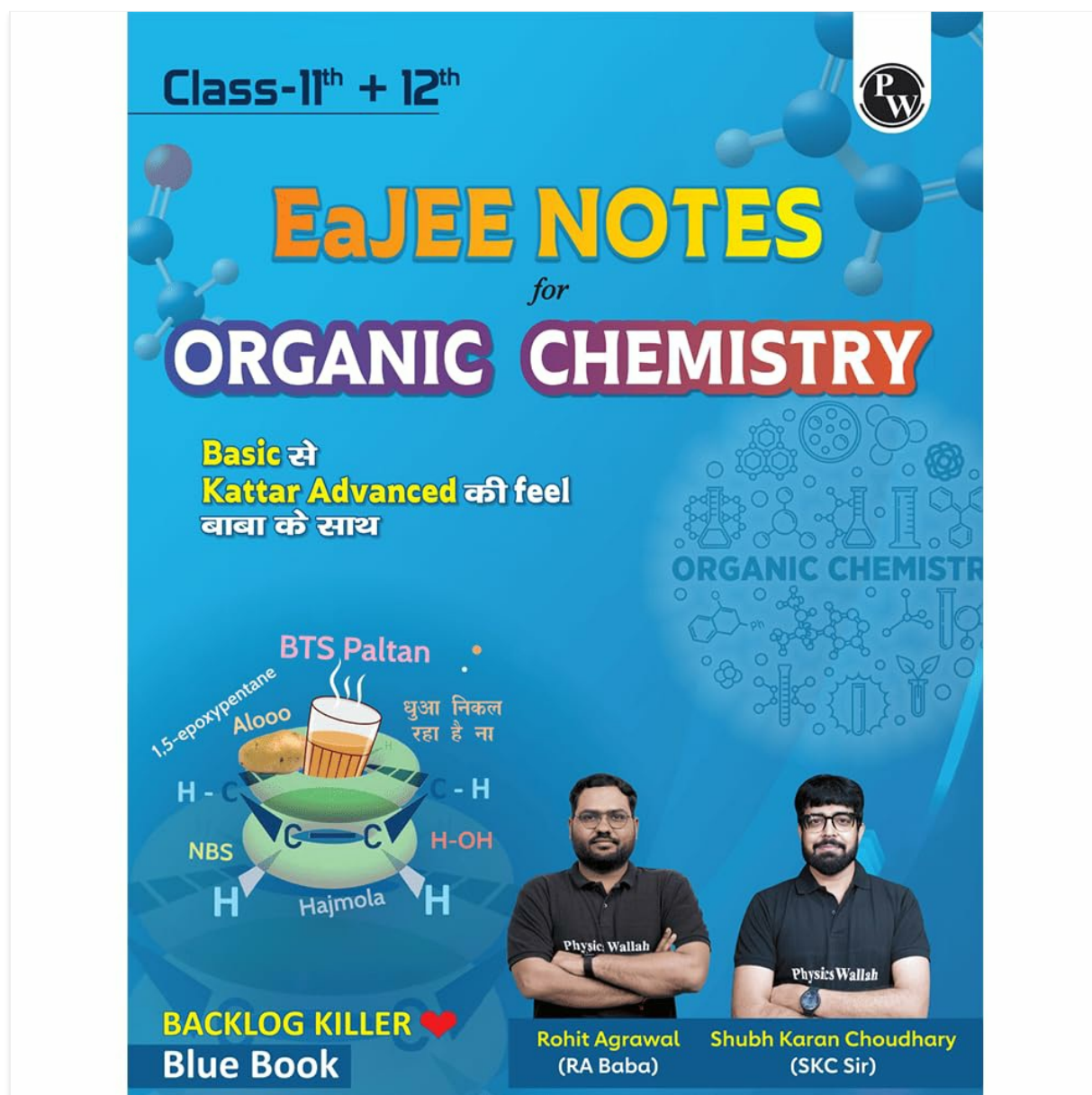


Image 1.1: Front cover of the PW EaJEE Handwritten Notes for Organic Chemistry book.

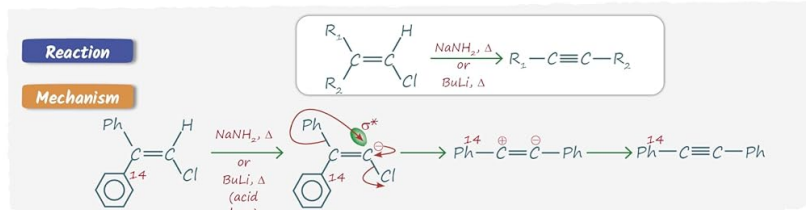
2. KEY FEATURES

This resource incorporates several features to support effective learning:

- **Extensive Practice Questions:** Over 3000 practice questions are included, comprising both original problems and Previous Year Questions (PYQs) from JEE Main & Advanced examinations.
- **Detailed Reaction Mechanisms:** Each reaction is accompanied by a step-by-step mechanism to enhance conceptual understanding.
- **Special Characteristics of Reactions (BTS):** Unique insights into specific features of reactions are provided to aid in problem-solving.
- **Chapter Summaries:** Concise, exam-focused summaries are available for quick revision of important concepts.
- **Multicoloured Handwritten Notes:** The notes are presented in a visually appealing, colour-coded handwritten format to improve retention and engagement.
- **Quick Reference Appendix:** An appendix contains important reactions, formulas, and concepts for efficient review.

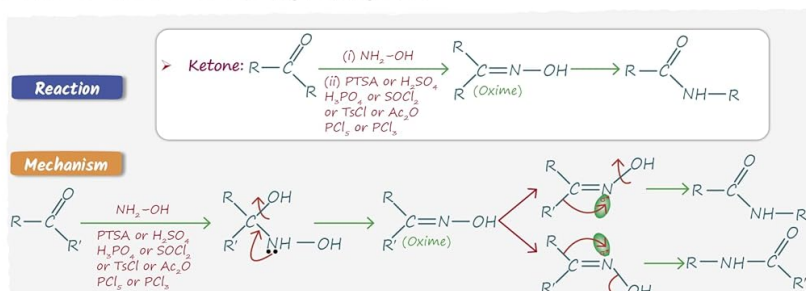
Frist Reaction (I, I-elimination)

In Frist Reaction both leaving groups depart from the same carbon, and a rearrangement occurs to stabilize the carbocation or carbanion intermediate, ultimately forming an alkyne.



Beckmann Rearrangement

Oximes undergo acid-catalyzed rearrangement to form amides; in aldo-oximes, nitriles are favoured if a stable carbocation is formed during rearrangement.



Abnormal Beckmann

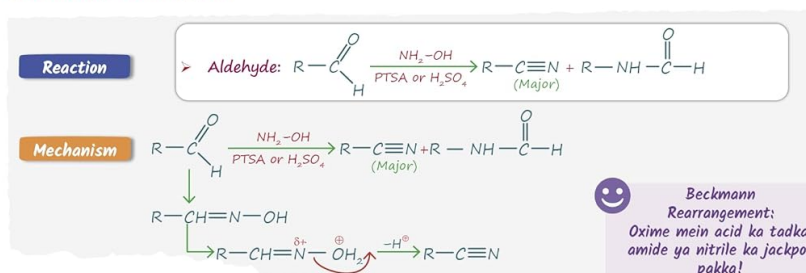


Image 2.1: Book cover illustrating the primary features of the EaJEE Handwritten Notes.

3. HOW TO USE THIS BOOK EFFECTIVELY

To maximize your learning experience with this book, consider the following guidelines:

3.1 Navigating Chapters

Proceed through the chapters sequentially to build foundational knowledge. Each chapter is structured to cover specific topics comprehensively.

3.2 Engaging with Practice Questions

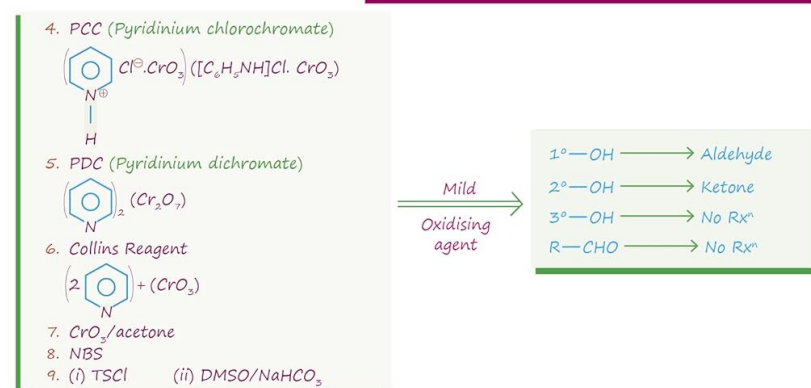
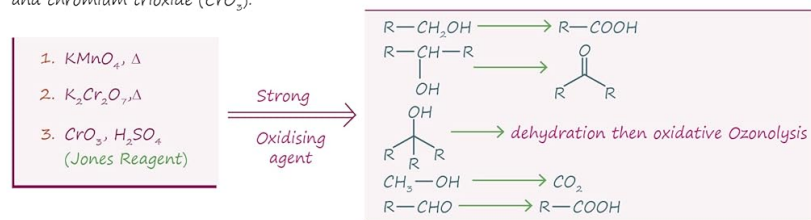
After studying a topic, attempt the practice questions and PYQs. This reinforces understanding and familiarizes you with exam patterns. Solutions are provided for self-assessment.

2. Oxidation of alcohol

> Oxidation of alcohols:

- Primary alcohols oxidize to form aldehydes, which can further oxidize to carboxylic acids.
- Secondary alcohols oxidize to form ketones.
- Tertiary alcohols generally do not oxidize easily because they lack hydrogen on the carbon with the -OH group.

Common oxidizing agents used are potassium permanganate (KMnO_4), potassium dichromate ($\text{K}_2\text{Cr}_2\text{O}_7$), and chromium trioxide (CrO_3).



The oxidation of alcohols with copper involves heating a primary or secondary alcohol with copper or copper oxide, which oxidizes the alcohol to an aldehyde (from primary alcohol) or a ketone (from secondary alcohol).

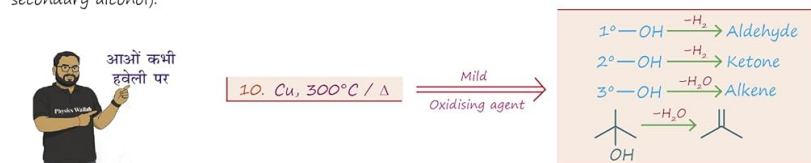


Image 3.1: An example page demonstrating practice questions and a reaction comparison table.

3.3 Mastering Reaction Mechanisms

Pay close attention to the detailed reaction mechanisms. Understanding these steps is crucial for solving complex problems and predicting reaction outcomes.

Polyhalogen Compounds

Polyhalogen compounds watching you skip their properties section: "You'll see me again... in the MCQ."



CH_2Cl_2 (Methylene Chloride)

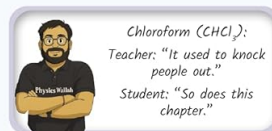
- (i) Use: Paint remover, propellant in a aerosol, drug manufacture. Metal cleaning & finishing
- (ii) Less Concentration: Nervous system, hearing, vision
- (iii) High Concentration: Dizziness, Nausea, numbness in fingers and toes.
- (iv) Direct contact: Intense burning of skin and cornea.

CHCl_3 (Chloroform)

- (i) Production of freon refrigerator R-22.
- (ii) Anaesthetic in Surgery with ether.
- (iii) 900ppm inhalation causes headache.
- (iv) Exposure to form phosgene gas.
 $2\text{CHCl}_3 + \text{O}_2 \longrightarrow 2\text{COCl}_2 + 2\text{HCl}$
- (v) Dark coloured bottle completely filled.
- (vi) Sometime EtOH is added.
 $\text{COCl}_2 + \text{EtOH} \longrightarrow$

CHI_3 (Iodoform)

- (i) Used as antiseptic due to free iodine not Iodoform.
- (ii) Objectionable smell.



CCl_4 (Tetrachloro methane)

- (i) Used in manufacture of refrigerator and aerosol propellant.
- (ii) Feedstock in CFC (CF_2Cl_2)
- (iii) Degreasing agent, fire extinguisher.
- (iv) Irregular heart beat and liver cancer.
- (v) Causes Ozone layer depletion.

Freons

- (i) Chlorofluoro carbon of methane and Ethane.
- (ii) Stable, unreactive, non toxic, easy to liquefiable.
- (iii) Produced by $\text{CCl}_4 + \text{AgF}$
- (iv) Aerosol propellant, fridge, AC
- (v) Production of 2B pounds till 1974
- (vi) Ozone layer depletion

DDT

- (i) First Cl containing insecticide
- (ii) Paul muller got Noble
- (iii) Effective for malaria and Typhus
- (iv) Fat soluble so stored in fat tissue of animals

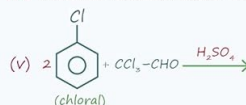


Image 3.2: A page illustrating detailed reaction mechanisms for various organic reactions.

3.4 Utilizing Summaries and Appendices

Use the chapter summaries for quick reviews before tests. The quick reference appendix is valuable for rapidly recalling important concepts and formulas.

4. BOOK CONTENTS

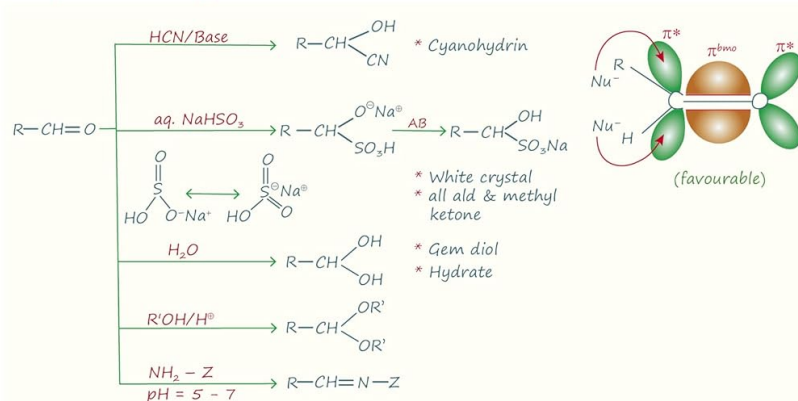
The book is organized into the following chapters:

1. Nomenclature of Organic Compounds
2. General Organic Chemistry (GOC)
3. Isomerism
4. Hydrocarbons
5. Haloalkanes and Haloarenes
6. Alcohols, Phenols and Ethers
7. Aldehydes, Ketones and Carboxylic acids
8. Amines
9. Biomolecules

- 10. Polymers
- 11. Chemistry in Everyday Life
- 12. Practical Organic Chemistry

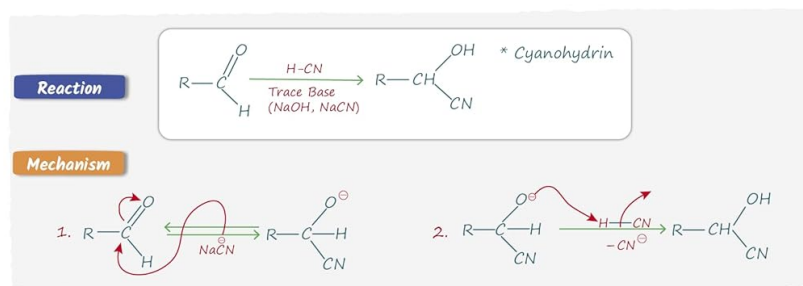


Example of Nucleophilic addition Reaction



Reaction with H-CN/Base

Aldehydes and ketones react with hydrogen cyanide (HCN) in the presence of a base to form cyanohydrins. In this nucleophilic addition, the CN^- ion attacks the carbonyl carbon, creating a new C-C bond and introducing both -OH and -CN functional groups.



Baba Tea-Stall (BTS)

- (i) This reaction occurs very slowly with pure HCN.
- (ii) Reaction is catalysed by Base to generate CN^- .
- (iii) Example of Nucleophilic addition Reaction.

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CHEMISTRY

Image 4.1: The Table of Contents page, listing all chapters covered in the book.

5. CARE AND HANDLING

To ensure the longevity of your book, please follow these care instructions:

- Store the book in a dry place away from direct sunlight and moisture.
- Avoid bending the spine excessively to prevent damage to the binding.
- Handle pages carefully to prevent tearing.
- Keep the book away from food and liquids to avoid stains.

6. TROUBLESHOOTING AND SUPPORT

If you encounter difficulties understanding specific concepts or require further clarification, consider the following:

- **Review Related Sections:** Revisit preceding topics or chapters that form the foundation for the current

concept.

- **Consult External Resources:** Utilize online educational platforms, academic textbooks, or seek guidance from mentors or educators.
- **Publisher Support:** For inquiries related to the book's content or any errata, you may contact Physics Wallah support channels.

For additional resources and to explore other Physics Wallah publications, visit the official store: [Physics Wallah Store](#).

7. SPECIFICATIONS

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8. ABOUT THE PUBLISHER

Physics Wallah (PW) is an educational technology company dedicated to providing accessible and high-quality education. Founded in 2020, PW supports students in achieving their academic goals, particularly in competitive examinations like JEE.



Image 8.1: Alakh Pandey (Founder & CEO) and Prateek Maheshwari (Co-Founder) of Physics Wallah.

PW offers a wide range of educational resources, including books, online courses, and offline centers, aiming to make learning engaging and effective for students across various academic levels.



Image 8.2: An overview of Physics Wallah's educational efforts and resources.