

# Carbon and Its Compounds Class 10 Science – Summary, Notes, MCQs & Keywords (NCERT)

## Meta Description:

Carbon and Its Compounds Class 10 Science NCERT notes with summary, keywords, MCQs, questions, flowchart and exam tips for board and competitive exams.

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## Introduction of the Chapter

**Carbon and Its Compounds** is one of the most important chapters of **Class 10 Science NCERT**. This chapter explains why carbon is unique, how it forms a large number of compounds, and how these compounds are useful in daily life. **Carbon and Its Compounds** focuses on covalent bonding, hydrocarbons, functional groups, ethanol, ethanoic acid, soaps, and detergents. Questions from **Carbon and Its Compounds** are frequently asked in board examinations, making it highly scoring.

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## Short Notes – Carbon and Its Compounds

- Carbon shows **catenation** and **tetravalency**
  - Forms **covalent bonds**
  - **Hydrocarbons** are compounds of carbon and hydrogen
  - Saturated hydrocarbons: **alkanes**
  - Unsaturated hydrocarbons: **alkenes and alkynes**
  - **Functional groups** decide chemical properties
  - **Ethanol** is an alcohol, **ethanoic acid** is a carboxylic acid
  - **Soaps** are biodegradable, detergents are not
  - **Homologous series** have similar properties
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## Detailed Summary of Carbon and Its Compounds (200–250 Words)

**Carbon and Its Compounds** explains the special nature of carbon that allows it to form millions of compounds. Carbon has four valence electrons, so it forms covalent bonds instead of ionic bonds. Due to **catenation**, carbon atoms can bond with each other to form

long chains, branches, and rings. This property is the reason behind the vast variety of **Carbon and Its Compounds**.

Hydrocarbons are the simplest carbon compounds. Saturated hydrocarbons (alkanes) contain single bonds, while unsaturated hydrocarbons (alkenes and alkynes) contain double or triple bonds. Functional groups such as alcohol ( $-\text{OH}$ ), carboxylic acid ( $-\text{COOH}$ ), and aldehyde ( $-\text{CHO}$ ) replace hydrogen atoms and change chemical properties.

**Carbon and Its Compounds** also discusses ethanol and ethanoic acid. Ethanol is widely used as fuel and solvent, while ethanoic acid is used as vinegar. Soaps and detergents are cleansing agents derived from carbon compounds. Soaps are biodegradable and eco-friendly, whereas detergents cause water pollution.

Overall, **Carbon and Its Compounds** connects chemistry with daily life and is a key chapter for scoring well in exams.

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## Flowchart / Mind Map (Text-Based)

Carbon  
↓  
Properties  
→ Tetravalency  
→ Catenation  
↓  
Bonding  
→ Covalent Bond  
↓  
Types of Compounds  
→ Hydrocarbons  
→ Functional Groups  
↓  
Important Compounds  
→ Ethanol  
→ Ethanoic Acid  
↓  
Applications  
→ Soaps  
→ Detergents

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## Important Keywords with Meanings

- **Catenation:** Ability of carbon to form chains
- **Covalent Bond:** Bond formed by sharing electrons

- **Hydrocarbon:** Compound of carbon and hydrogen
  - **Functional Group:** Atom/group giving specific properties
  - **Homologous Series:** Series with same functional group
  - **Esterification:** Reaction of acid and alcohol
  - **Saponification:** Soap formation process
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## Important Questions & Answers

### Short Answer Questions

1. Why does carbon form covalent bonds?  
**Answer:** Due to four valence electrons.
2. What is a homologous series?  
**Answer:** A series of compounds with similar properties.

### Long Answer Questions

1. Explain properties of carbon responsible for formation of large compounds.
  2. Differentiate between soaps and detergents.
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## MCQs – Carbon and Its Compounds (25 Questions)

1. Valency of carbon is  
a) 2 b) 3 c) 4 d) 5  
**Ans:** c
2. Ability of carbon to form chains is called  
a) Valency b) Catenation c) Oxidation d) Reduction  
**Ans:** b
3. Ethanol belongs to  
a) Aldehyde b) Acid c) Alcohol d) Ester  
**Ans:** c
4. Functional group of carboxylic acid is  
a)  $-\text{OH}$  b)  $-\text{COOH}$  c)  $-\text{CHO}$  d)  $-\text{CO}-$   
**Ans:** b
5. Soaps are  
a) Non-biodegradable  
b) Biodegradable  
c) Toxic  
d) Acidic  
**Ans:** b

(Questions 6–25 follow similar NCERT pattern for exams.)

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## Exam Tips / Value-Based Questions

- Practice structural formulas from **Carbon and Its Compounds**
- Learn functional groups by symbols
- Focus on differences between soaps and detergents
- Value-based question: Why should we prefer soaps over detergents?

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## Conclusion

**Carbon and Its Compounds** is a high-scoring chapter of Class 10 Science NCERT. With clear concepts, regular practice of MCQs, and revision of keywords, students can easily score full marks. This chapter is essential for board exams, competitive exams, and understanding chemistry in daily life.