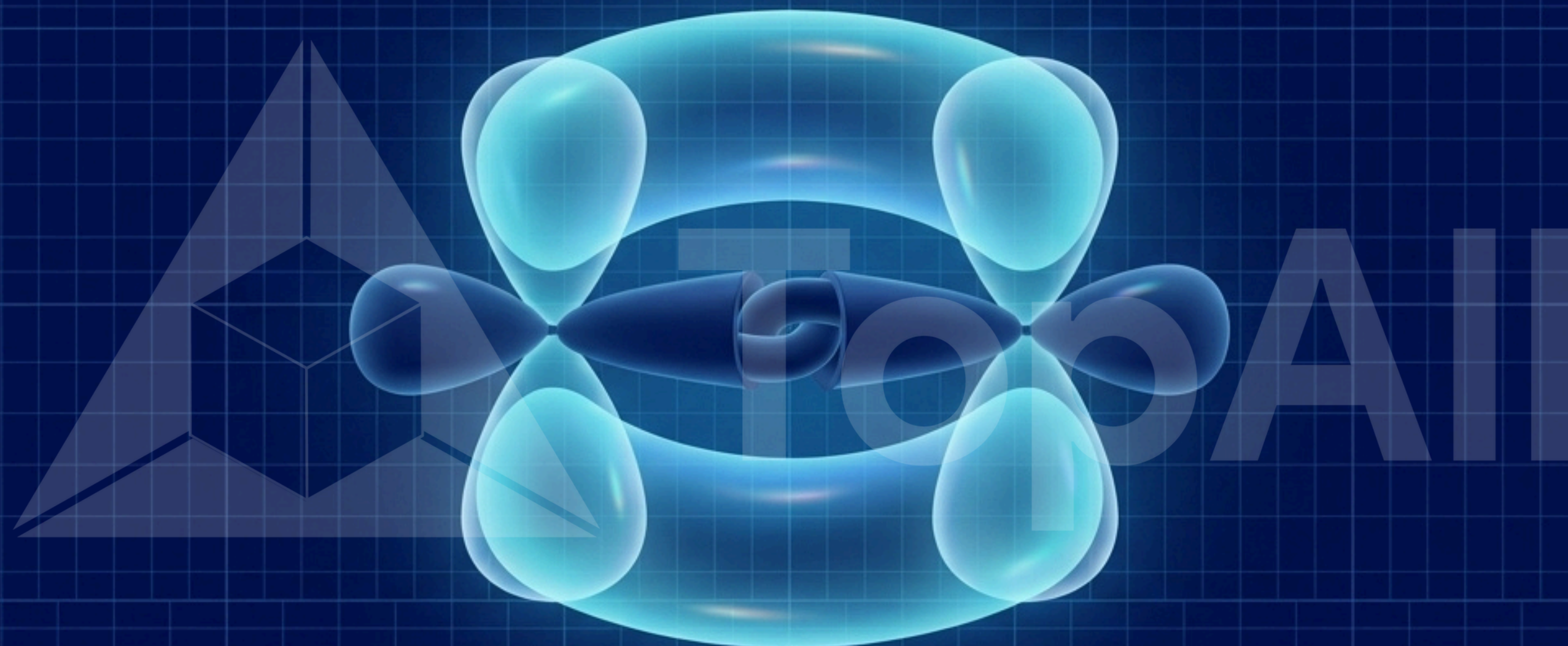


CLASS 11 CHEMISTRY • HYDROCARBONS

# NOMENCLATURE OF ALKENES



UNSATURATED HYDROCARBONS

$C_nH_{2n}$  GENERAL FORMULA

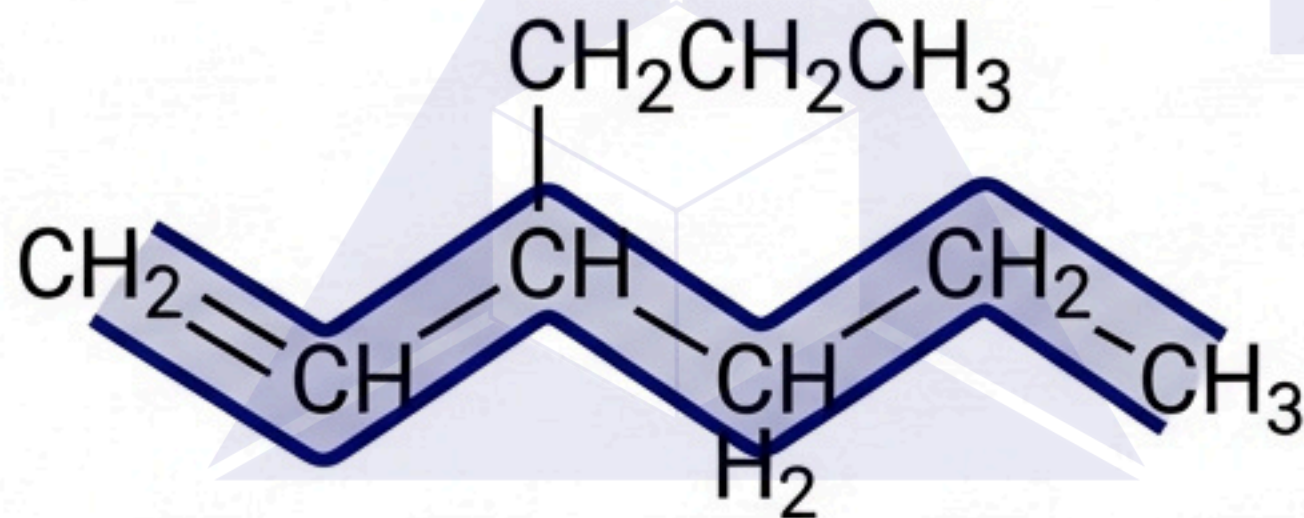
IUPAC STANDARDS

# Choose The Longest Chain Containing The Double Bond

Correct



Valid Parent Chain  
(Hexene)

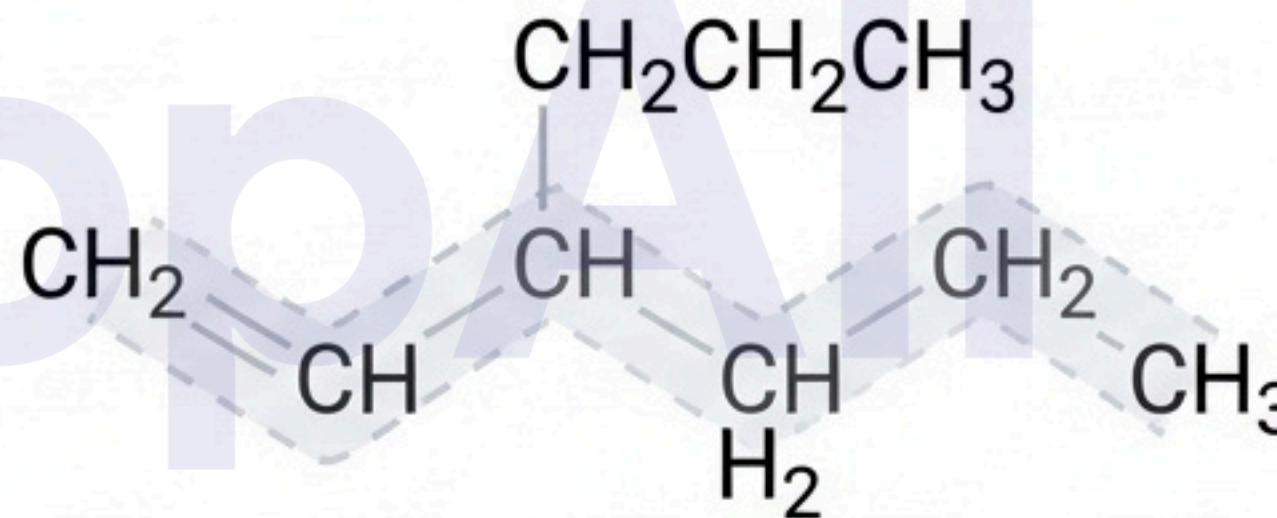


Hexene (6 Carbons, Includes C=C)

Incorrect



Invalid  
(Misses C=C)

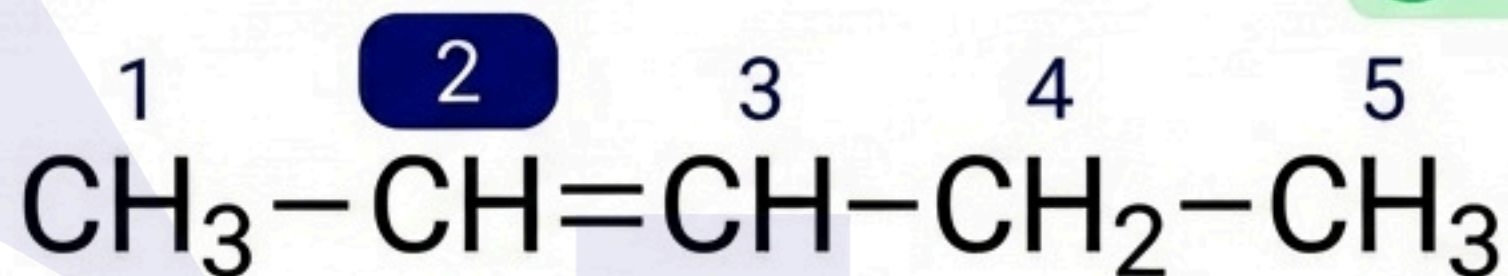


Heptane (7 Carbons, Excludes C=C)

The double bond dictates the parent chain, even if a longer continuous carbon chain exists elsewhere in the molecule.

# Number From The End Nearer To The Double Bond

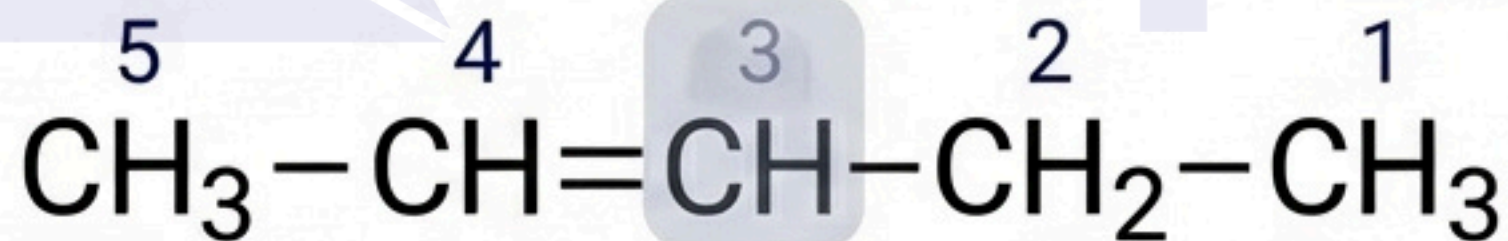
✓ Correct Pathway



Pent-2-ene (Lowest possible number for C=C)

✓ Lowest Locant (2) -> Correct Pathway

✗ Incorrect Pathway



Pent-3-ene (Incorrect numbering, C=C locant is higher)

✗ Higher Locant (3) -> Incorrect Pathway

Priority Rule: C=C Double Bond > Alkyl Substituents



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Let's Test Them Now.**

$$E=mc^2$$



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## Replace 'Ane' With 'Ene'

Simple Transformation     Alk[ane]  $\rightarrow$  Alk[ene]

Positioning Syntax     [Word Root] + [Locant] + [ene]

But + **1** + ene = But-1-ene

The Diene Rule     [Word Root] + 'a' + [Locant 1, Locant 2] + [diene]

Buta + **1,3** + diene = Buta-1,3-diene

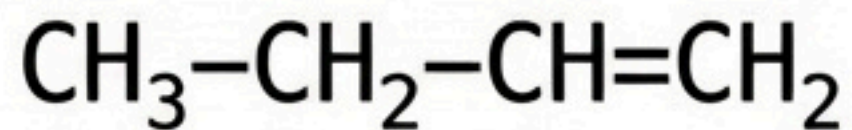
When two or more double bonds are present, the primary suffix becomes 'diene' or 'triene', and an 'a' is added to the word root.

# Nomenclature Example Set



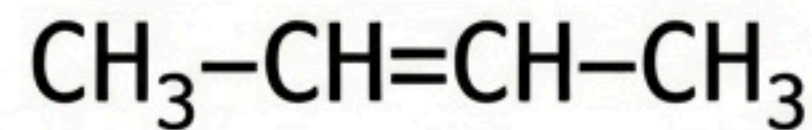
**Propene**

Base Alkene



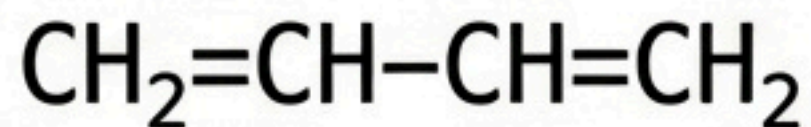
**But-1-ene**

Terminal Double Bond



**But-2-ene**

Internal Double Bond



**Buta-1,3-diene**

Diene Rule



**2-Methylprop-1-ene**

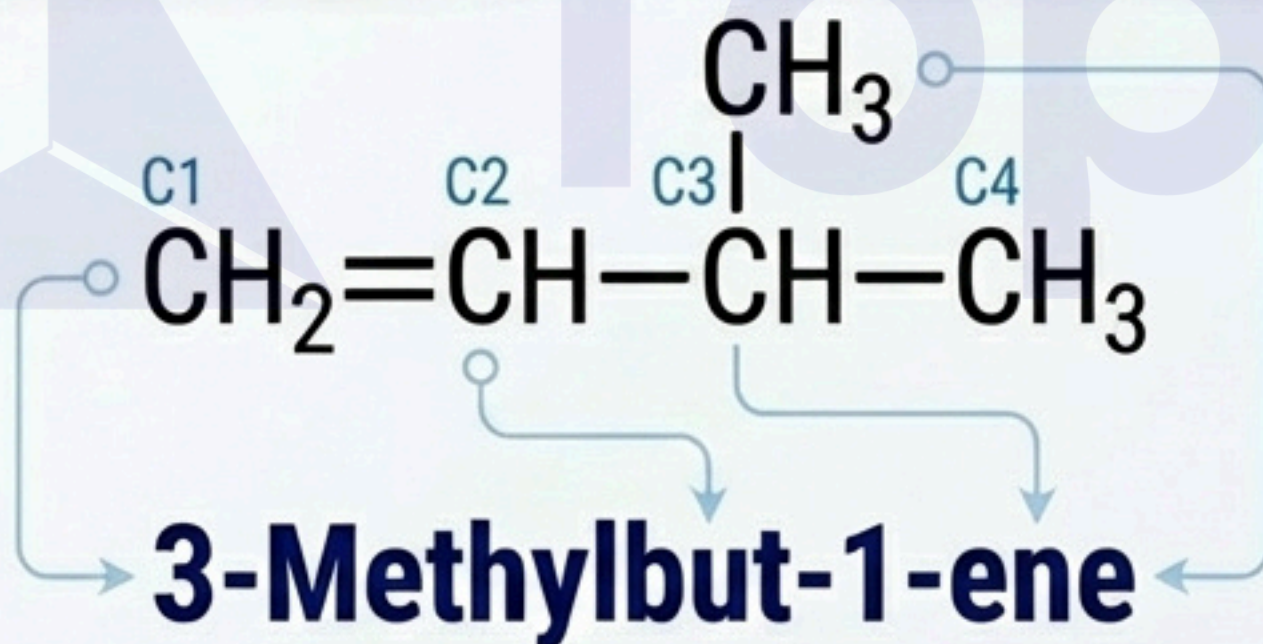
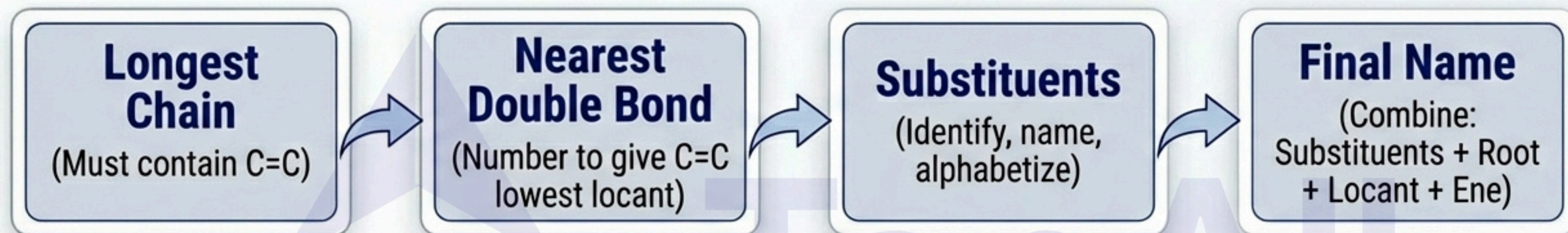
Branched



**3-Methylbut-1-ene**

Branched Priority

# Quick Naming Checklist



Exam Note: Always verify that the lowest locant rule applies if multiple substituents exist, but only *after* satisfying the double bond priority constraint.



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