

CLASS 10 ACADEMIC PROGRAM 2020

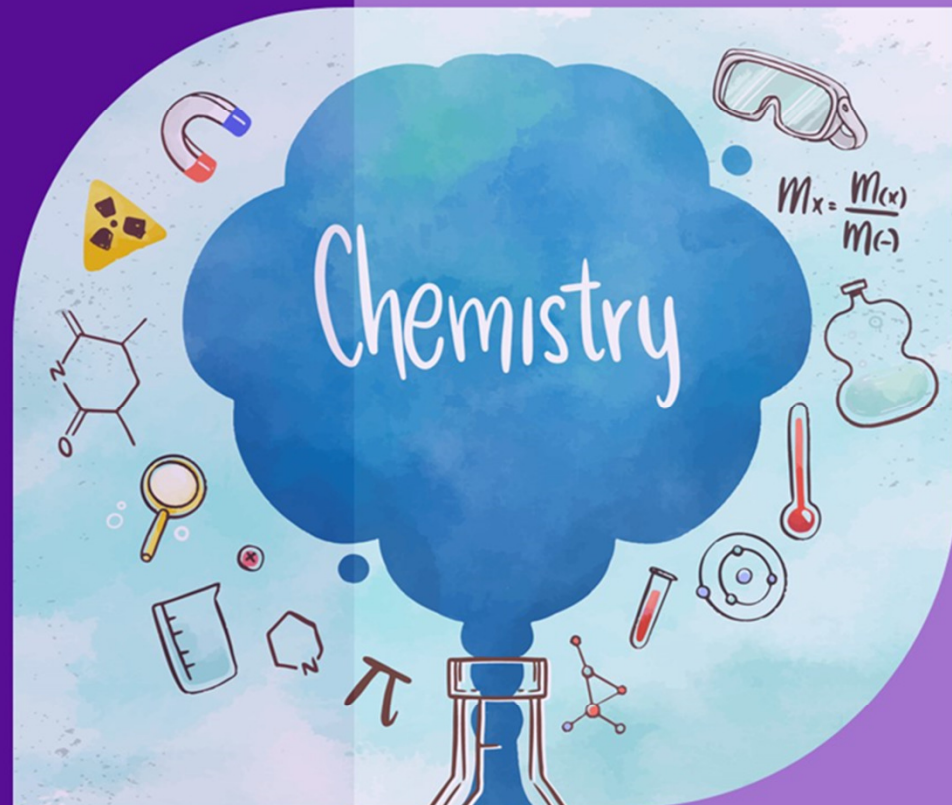
CHEMISTRY

LECTURE : C-30

CHAPTER 11 : MINERAL RESOURCES

no nomenclature of
Organic compound

Sadat Ahmed Dipo



উদ্ভাস

একাডেমিক এন্ড এডমিশন কেয়ার

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Nomenclature of Organic Compounds

Characteristic of parent chain ✓?

❑ C-C chain

❑ longest

❑ Presence of functional group

IUPAC →

Prefix

Substitute

Word Root

Suffix

Total no. of carbons

mother compound

hex

ane
ene
yne

butane X

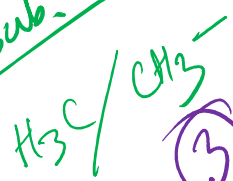
replace

5C. → pent X

hexane ✓
butane X

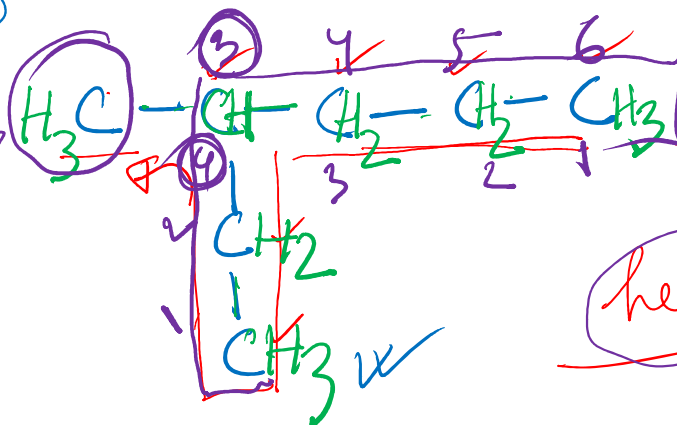


Sub.



Alkene
Alkyne

branched

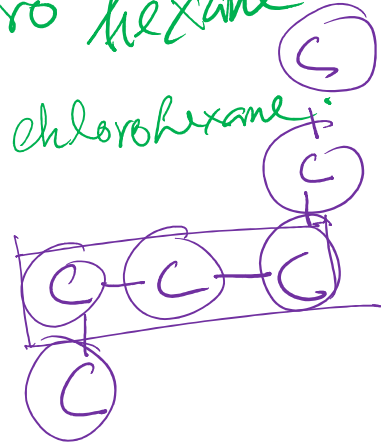


3-methylhexane

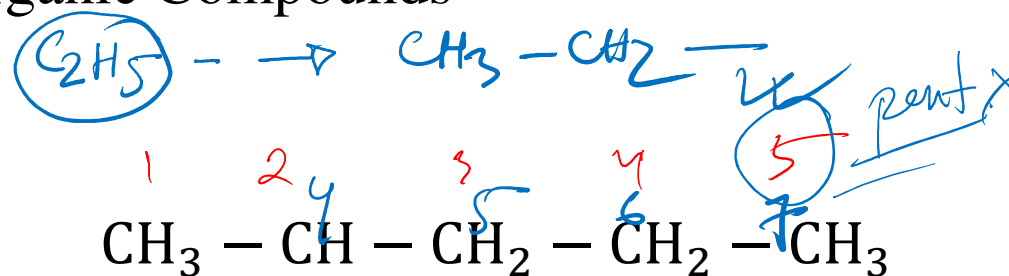
Chloro hexane

chlorohexane

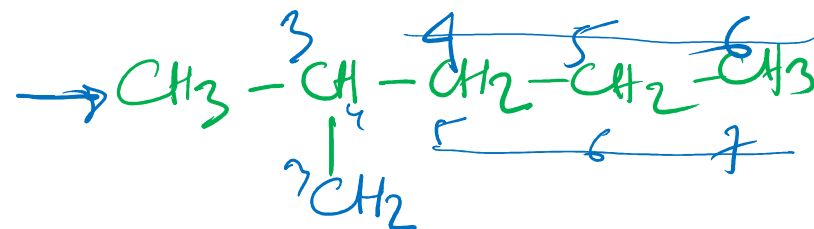
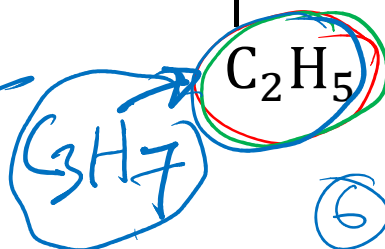
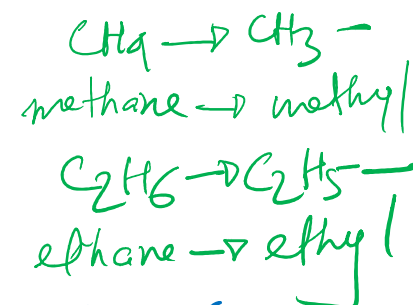
hexane



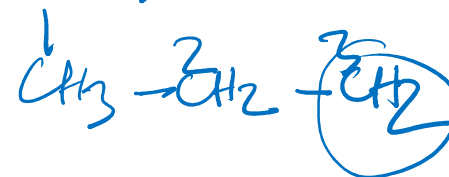
Nomenclature of Organic Compounds



Alkane $- \text{H} \rightarrow$ Alkyl Radical

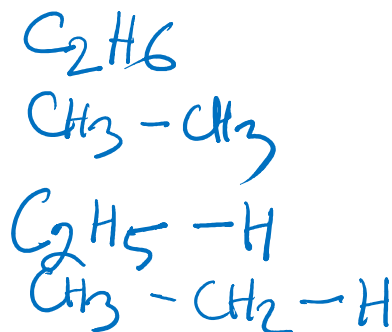


heptane



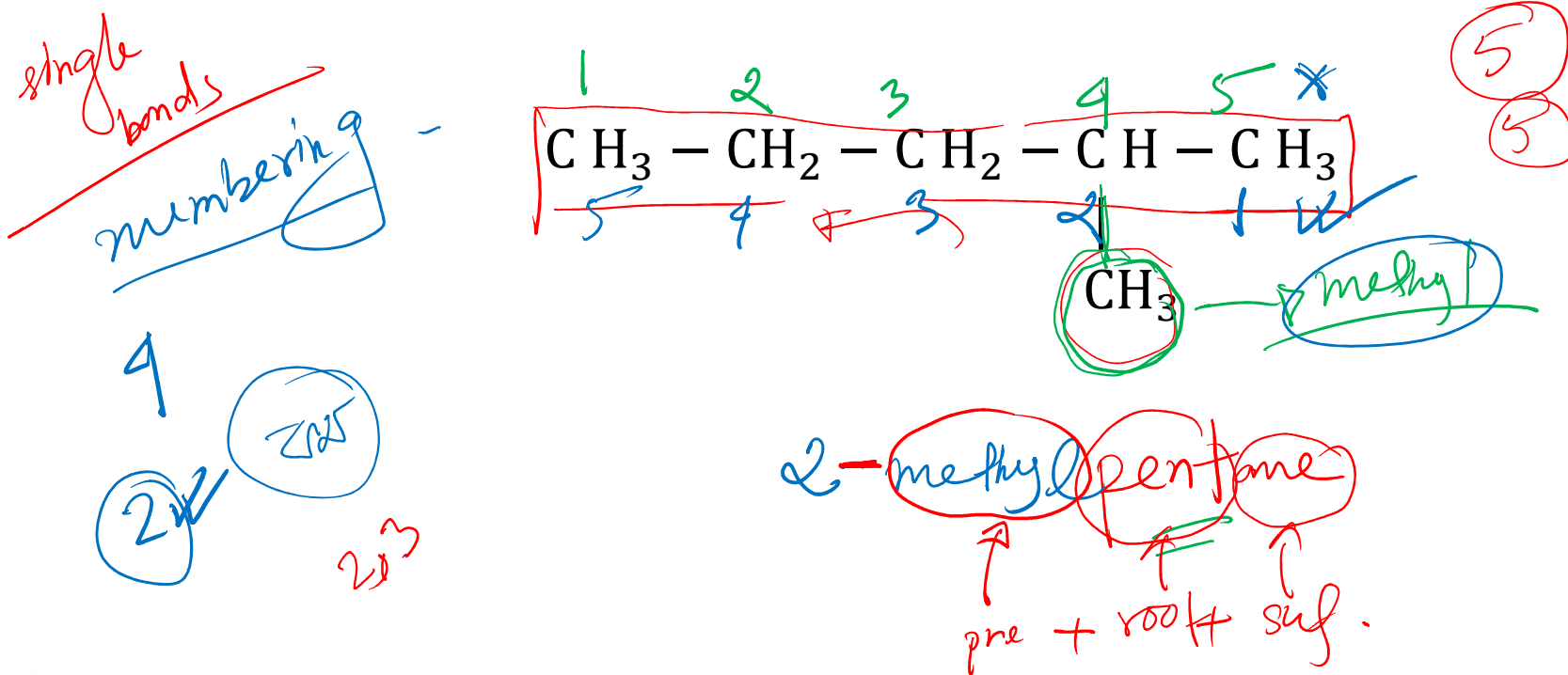
How many carbons are there in the longest chain?

- (a) 4
- (b) 5
- (c) 6
- (d) 7

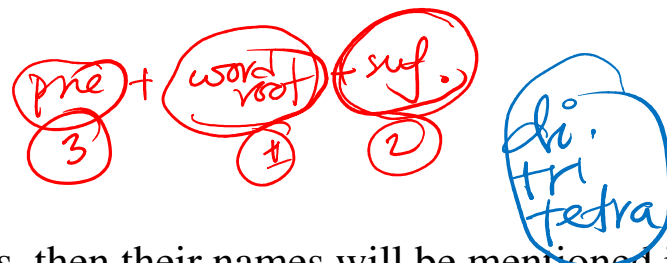


Nomenclature of Organic Compounds

In case of naming branched alkanes, at first the longest chain is determined



Nomenclature of Organic Compounds

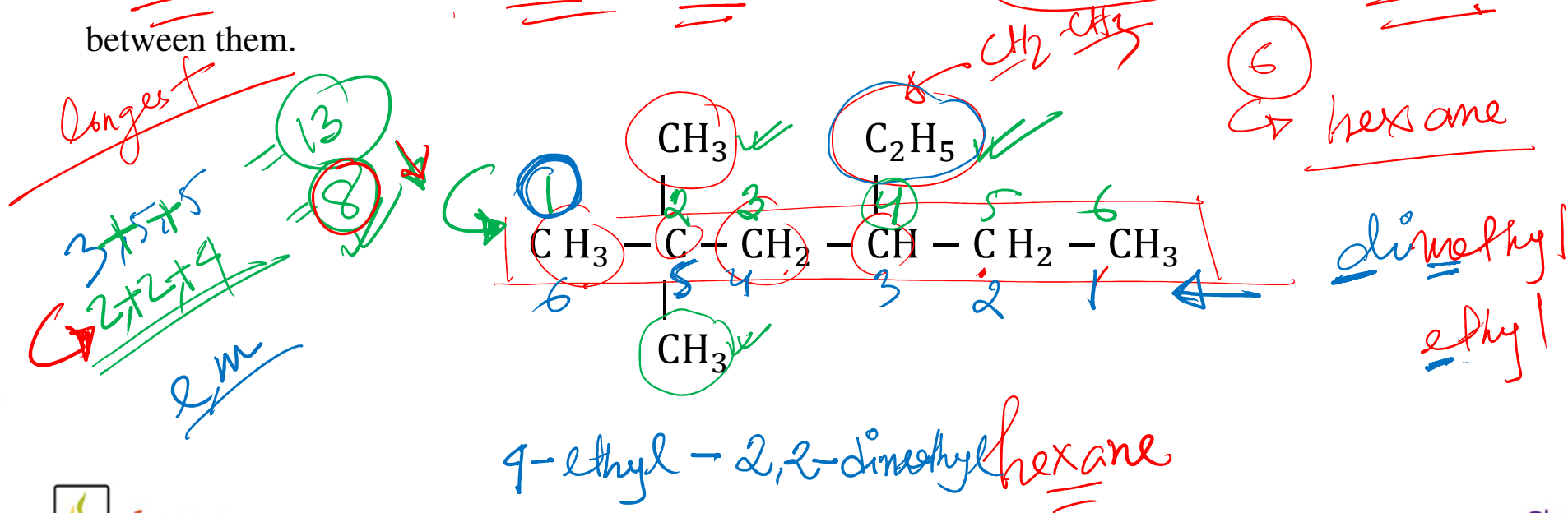


- If more than one side chains are attached with more than one carbons, then their names will be mentioned in alphabetical orders

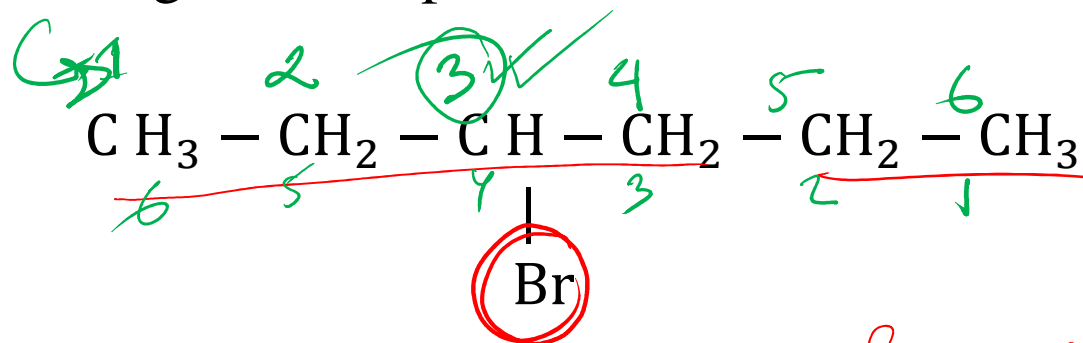
1, 2, 3, 4 - tetrachloro

2, 2, 2 - trichloro

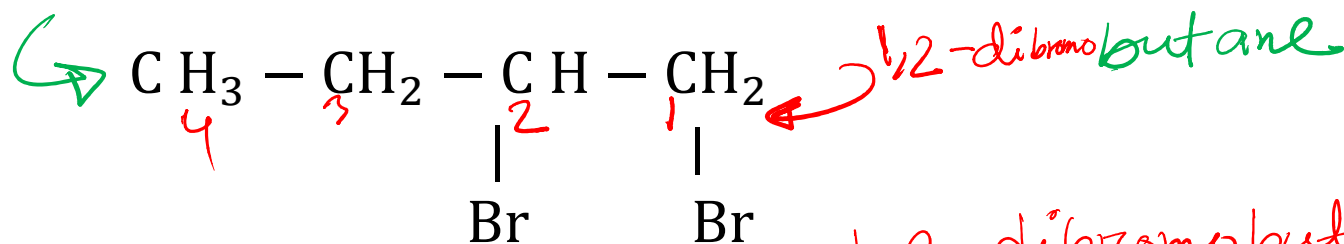
- Hyphen (-) is given between number and words and if there is more than one number comma (,) is given between them.



Nomenclature of Organic Compounds



3-bromohexane

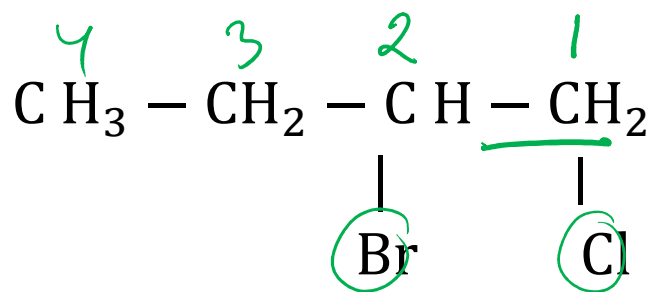


1,2-dibromobutane

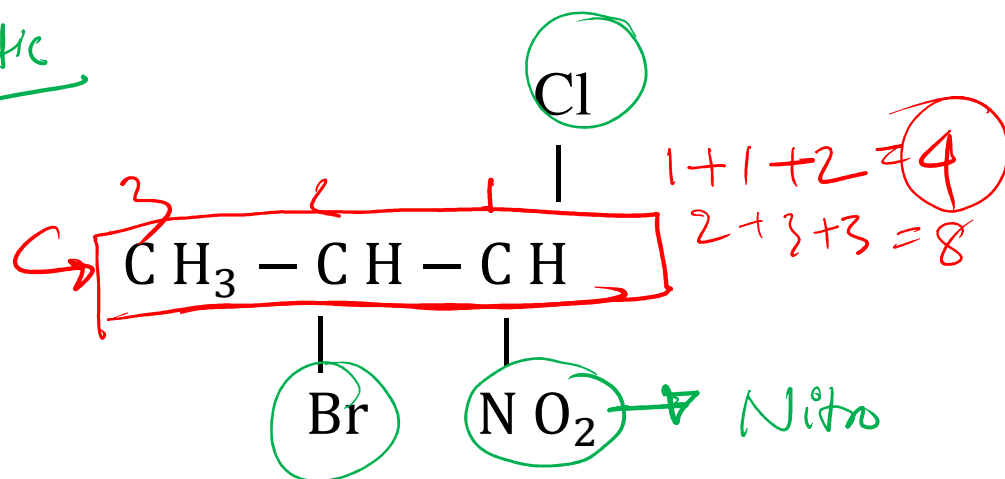
pre + root + suf
 (2) (1) (2)
 halo gen
 chloro

Nomenclature of Organic Compounds

Alphabetic



2-bromo-1-chlorobutane



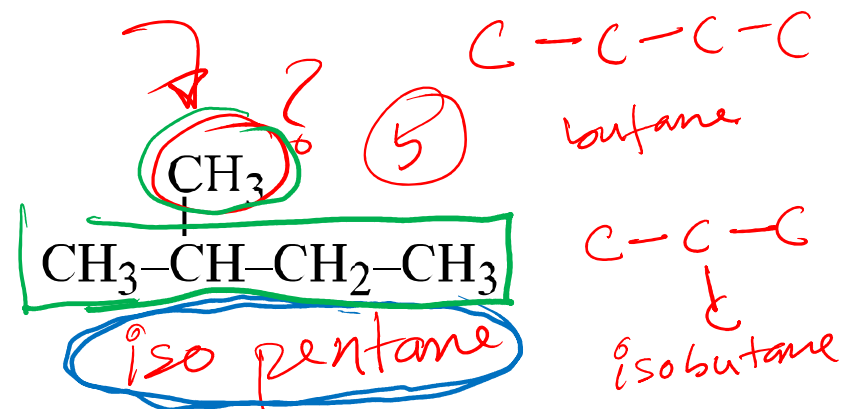
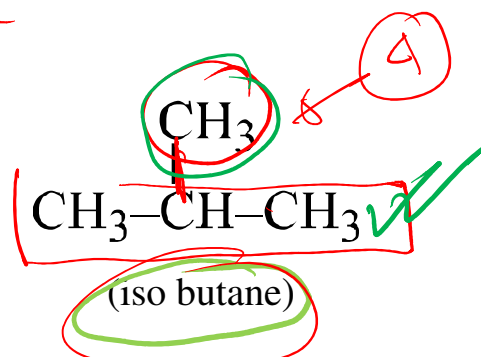
2-bromo-1-chloro-1-nitropropane

Nomenclature of Organic Compounds

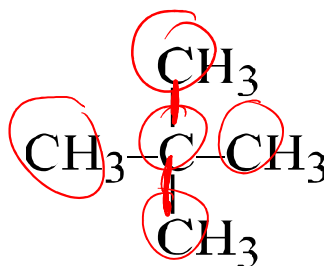
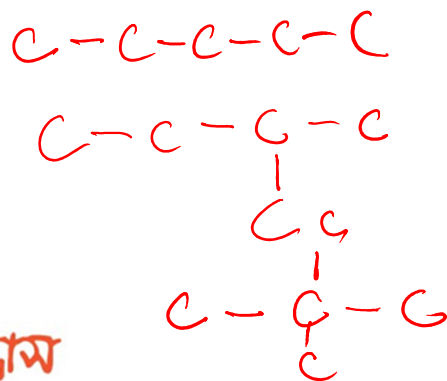
IUPAC latest

long time ago when organic compounds are named as iso, neo etc. When a methyl group ($-\text{CH}_3$) is there as a branch the compound is named as iso. like,

propane ✓ IUPAC
iso butane
 natural gas



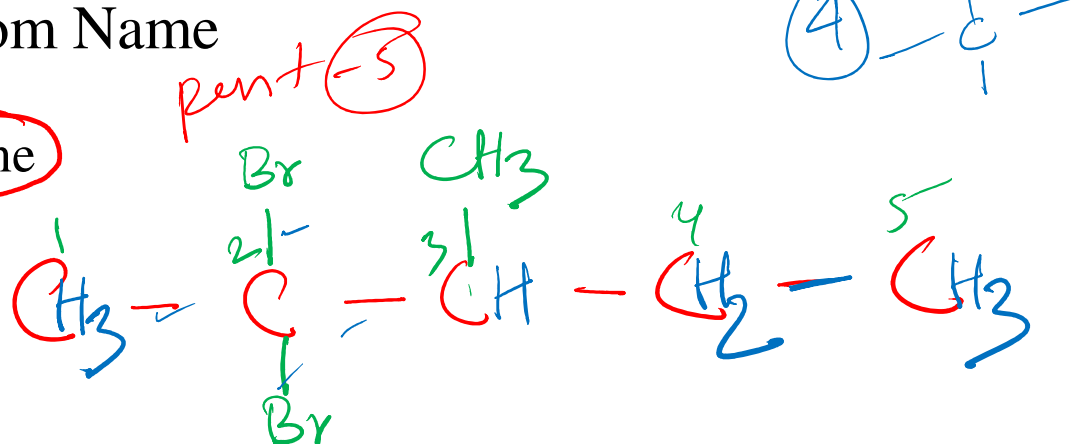
if there are two methyl groups with the same carbon as branches in that case it is named as neo. like,



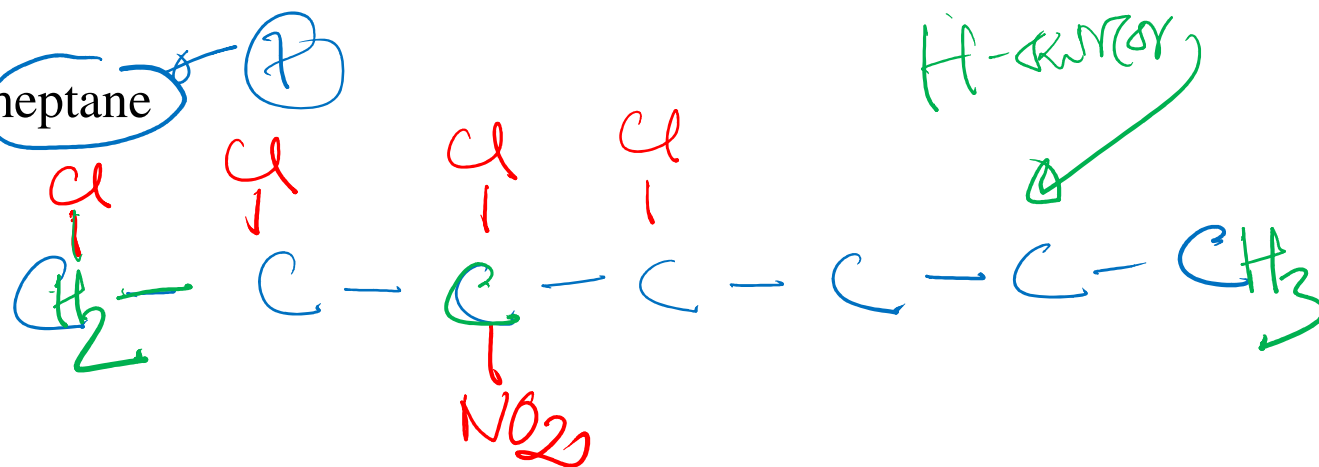
neo pentane
 2-methylbutane

Determining formula from Name

2,2-dibromo-3-methylpentane



1,2,3,4-tetrachloro-3-nitroheptane



Naming of alkenes

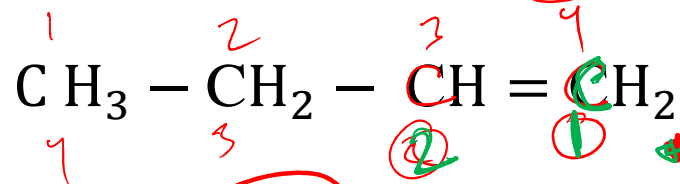
01. 'ene' is written after the name of the compounds

02. Including the carbon carbon double bond the longest chain is considered the main chain.

03. The parent chain is selected in such a manner that all the side chains must be directly connected to the parent chain. This implies that none of the side chains will have additional branches.

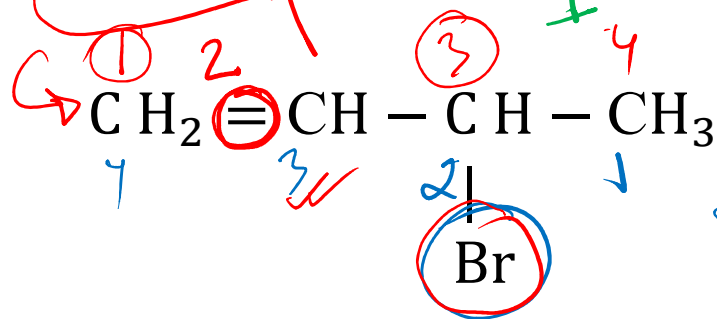
04. The carbons in the main chain are numbered. Numbering is started from where the carbon carbon double bond is near

Naming of alkenes



But-1-ene

butene-1
1-butene



3-bromobut-1-ene

Priorify?

sub.
functional group

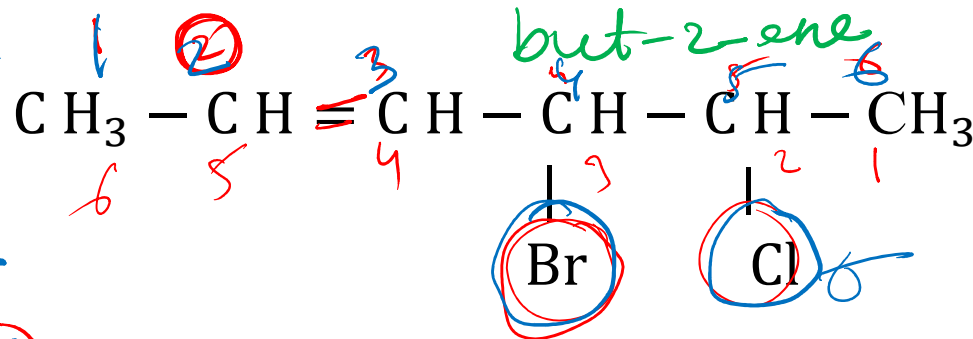
অন্য এক
 $\text{C}=\text{C}$ error



butene-2

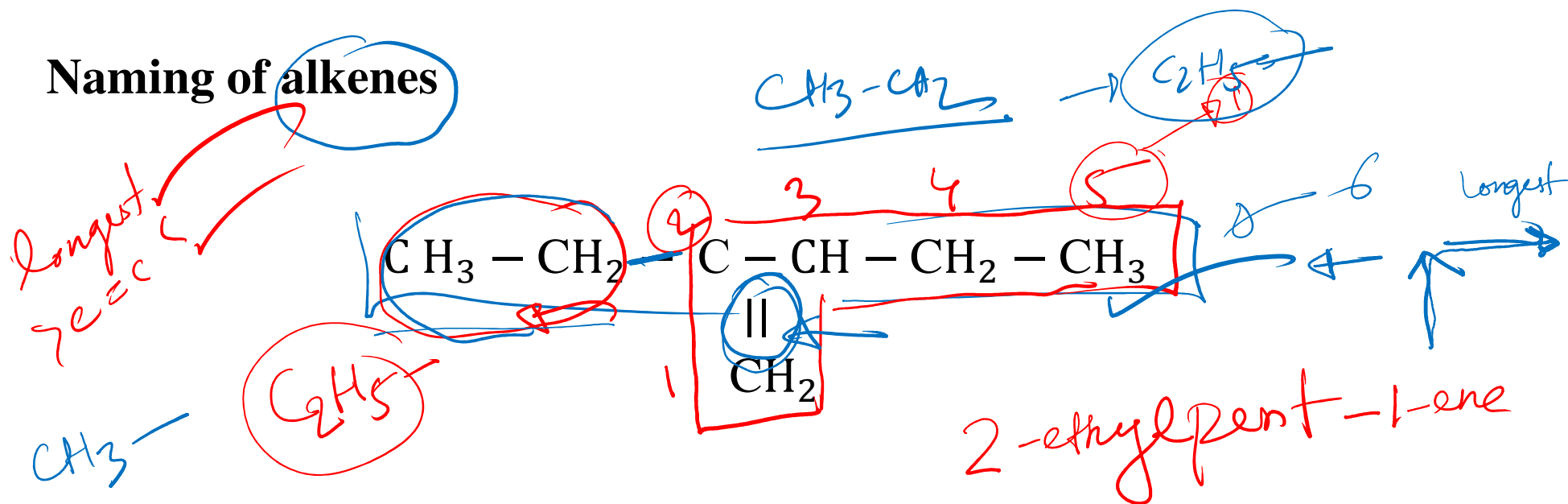
2-butene

but-2-ene



4-bromo-5-chlorohex-2-ene

Naming of alkenes



How many carbons are there in the parent chain of the compound?

(a) 4

(b) 5

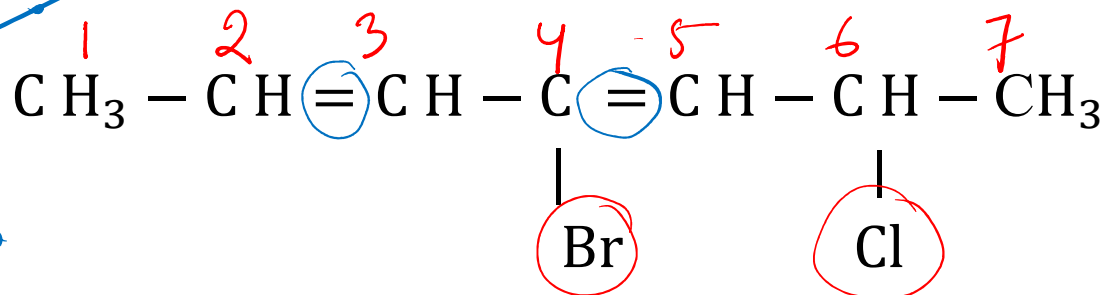
(c) 6

6 → Alkene



Naming of alkenes

Practice



diene

$\text{CH}_3 \rightarrow \text{methyl}$
 $\text{CH}_2 \rightarrow \text{ethylene}$
 $\text{CH} \rightarrow \text{ethene}$
 $\text{CH}_3\text{CH}_2 \rightarrow \text{ethyl}$

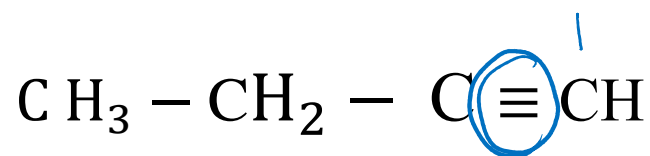
4-bromo-6-chlorohept-2,4-diene

Naming of alkynes

yne

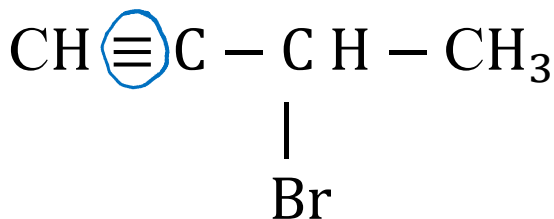
01. Yne will be their after the names of each compounds.
02. Keeping carbon carbon triple bond included ($-C \equiv C -$) the longest chain is taken as the main chain.
03. Rest of the rules similar to alkene

Naming of alkynes

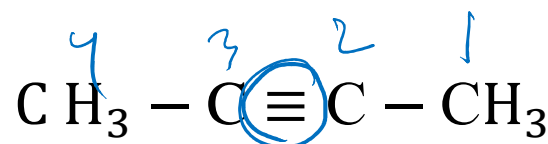


but-1-yne

Practice

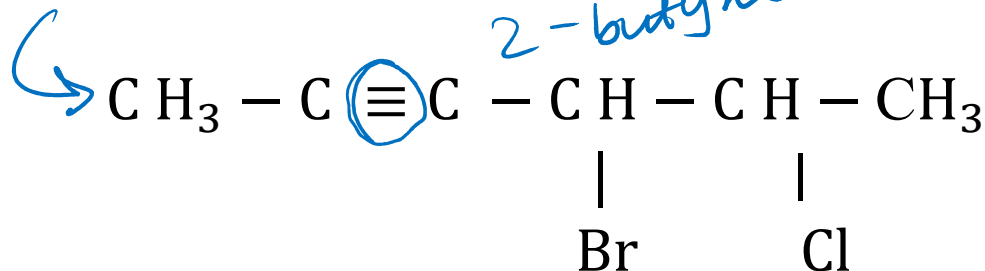


3-bromobut-1-yne



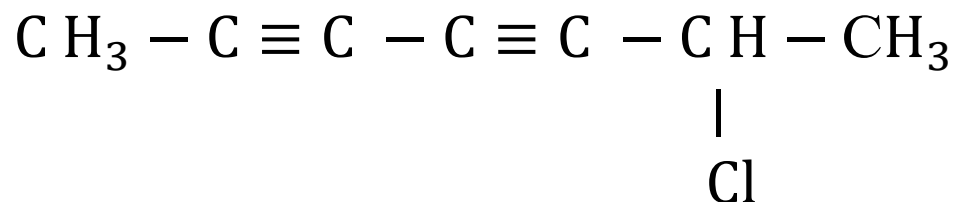
but-2-yne

butyne-2
2-butyne



4-bromo-5-chlorohex-2-yne

Naming of alkynes



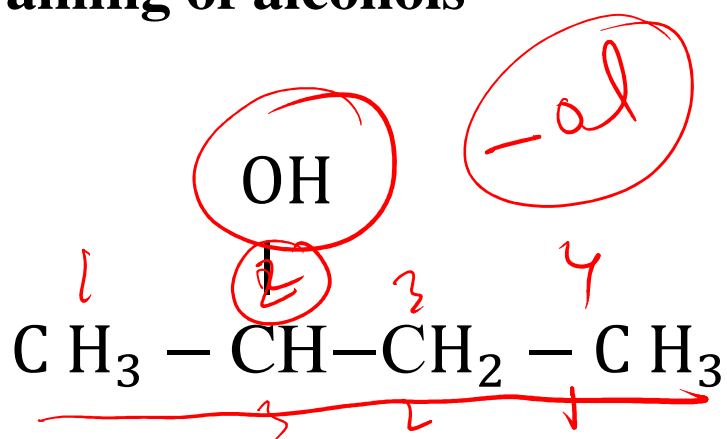
priority
→ func. group ✓

What will be the name of the compound?

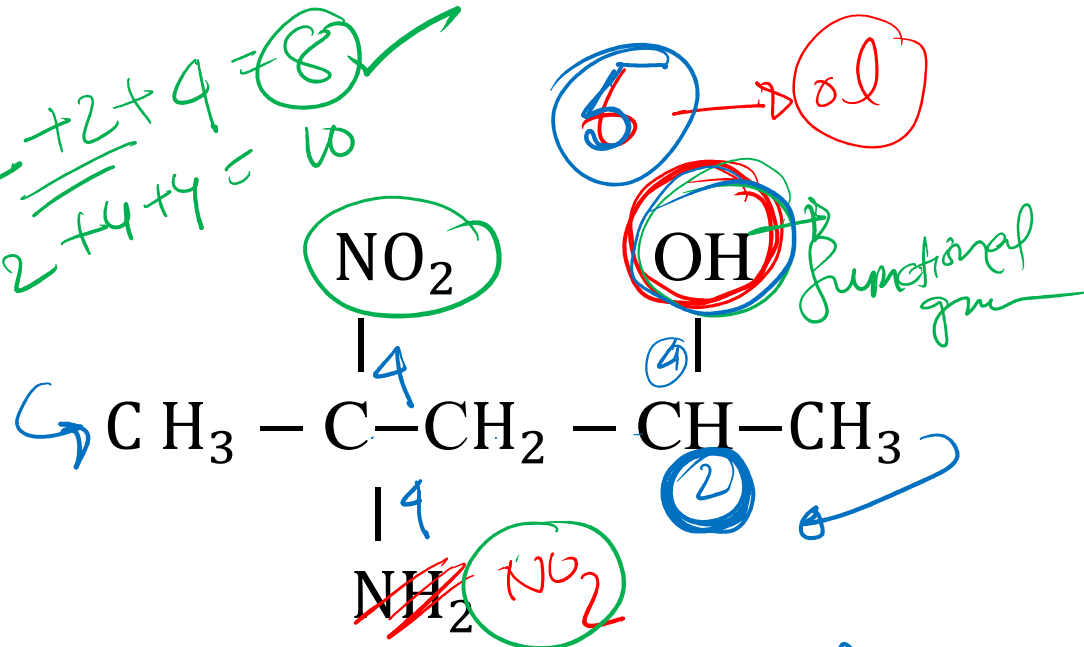
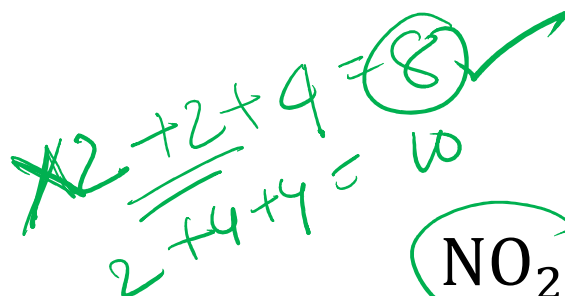
(a) 2-chlorohept-3,5-diyne

✓ (b) 6-chlorohept-2,4-diyne

Naming of alcohols



Butanol-2
2-butanol
but-2-ol



4,4-dinitro pent-2-ol

লেগে থাকো সৎ ভাবে,
স্বপ্ন জয় তোমারই হবে।