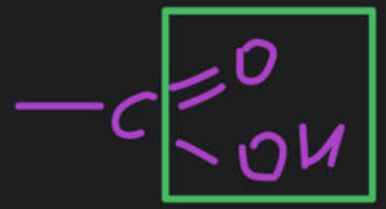
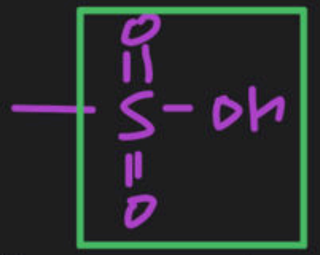
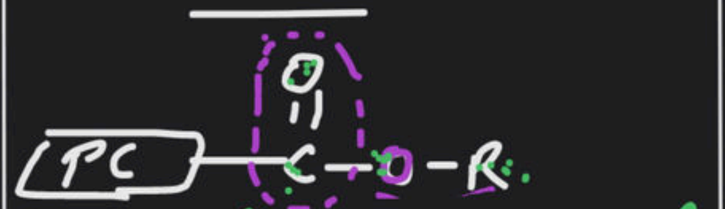
Rules for Selection of Longest Chain - II

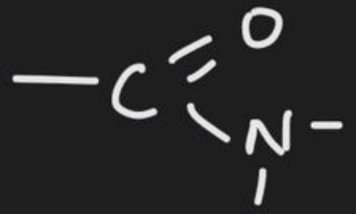
Course on Nomenclature of Organic Compounds for Class XI

SURENDRA K MISHRA • Lesson 11 • July 8, 2021

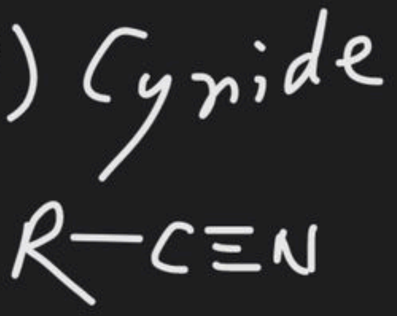
Functional group	Prefix	Suffix	Suffix
(1) Carboxylic Acid $R-COOH$	Carboxy	-oic Acid 	Carboxylic Acid 
(2) Sulphonic Acid $R-SO_3H$	Sulpho	Sulphonic Acid 	-------
(3) Acid anhydroxy	 Alkoxy Carbonyl  Alkanoyl oxy	oic anhydride	Carboxylic acid anhydride
(4) Ester		-oate 	Carboxylate 

(5) Acid Halide

(6) Acid Amide



(7) Cyanide

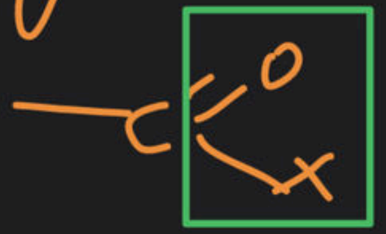


Halo Carbonyl

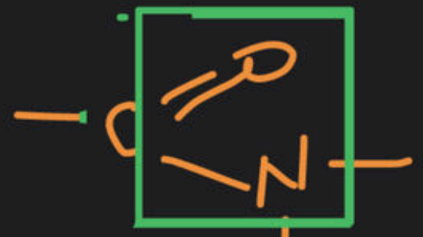
Carbamoyl

Cyano

Oyl halide

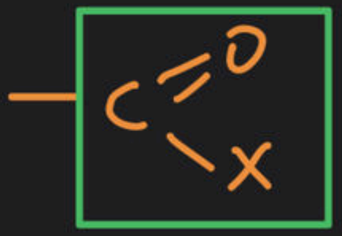


Amide

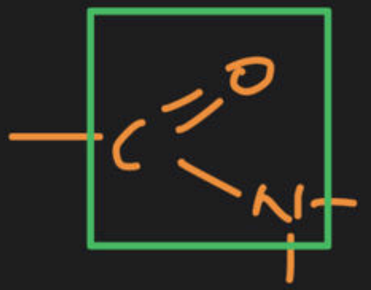


nitrile

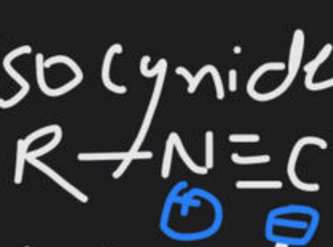
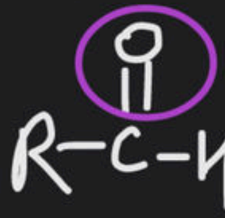
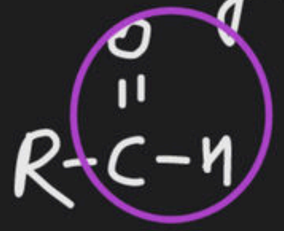
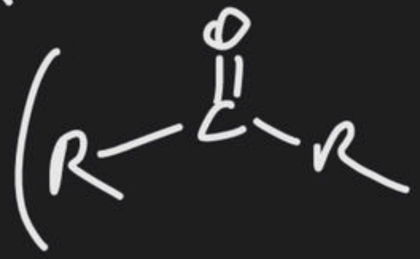
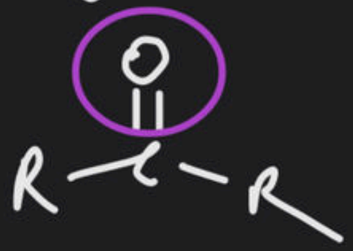
Carbonyl halide



Carboxamide



Carbonitrile

(8) Isocyanide 	isocyano	isonitrile	------
(9) Aldehyde 	Oxo  Formyl 	al	Carbaldehyde
(10) Ketone 	Oxo 	one	------
(11) Alcohol (R–OH)	Hydroxy	ol	

(13) Amine

$R-NH_2$

(*) Ether	Alkoxy	
(*) Halide	halo	
(*) Nitro	Nitro	
(*) Alkene		(1° suffix) ene
(*) Alkyne		yne

Amino

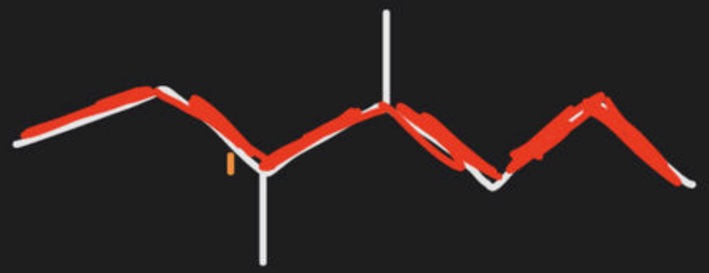
Amine

Rules for Selection of Principal chain

Case (i) (a) when Compound is saturated Hydrocarbon or its halide, Ether, nitro Compound.

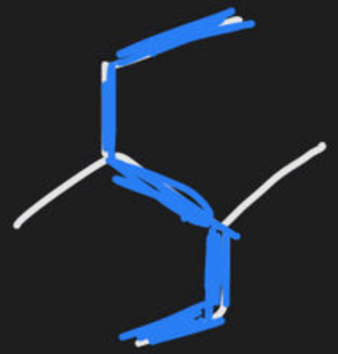
Select longest Carbon chain as a Principal chain.

Ex-1 (a)



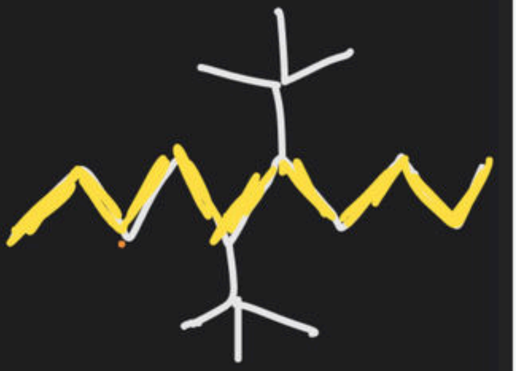
(7 Carbon chain)

(b)

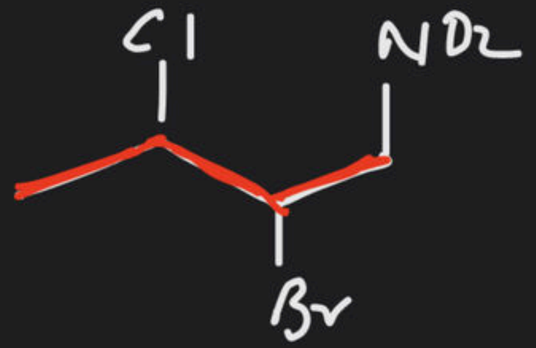


(6 Carbon chain)

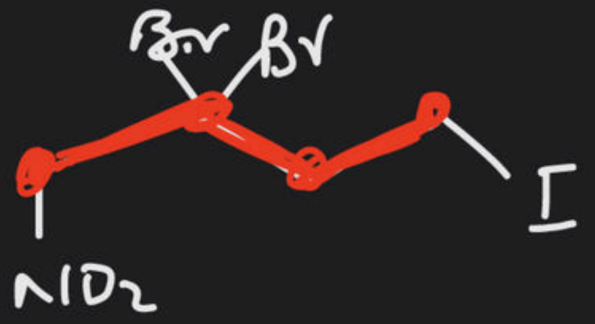
(c)



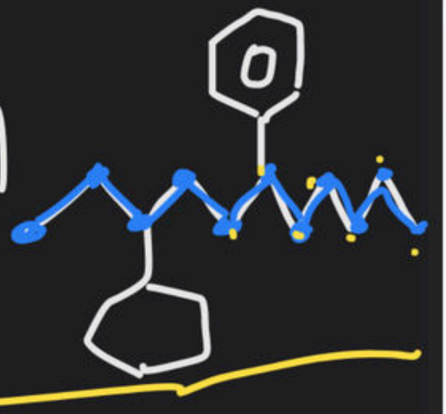
(10 Carbon chain)

(d) 

(4 Carbon)

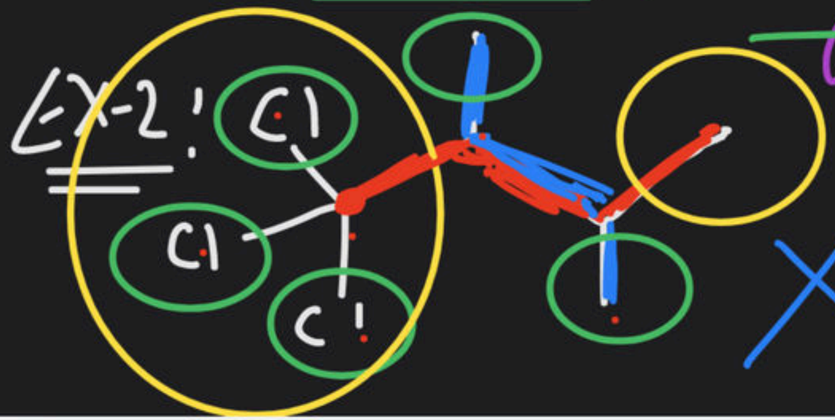
(e) 

(4 Carbon)

(f) 

(11 Carbon)

(b) If more than one longest Carbon chains are available then Select that longest chain which Contain highest no of side chain/ Substituents.

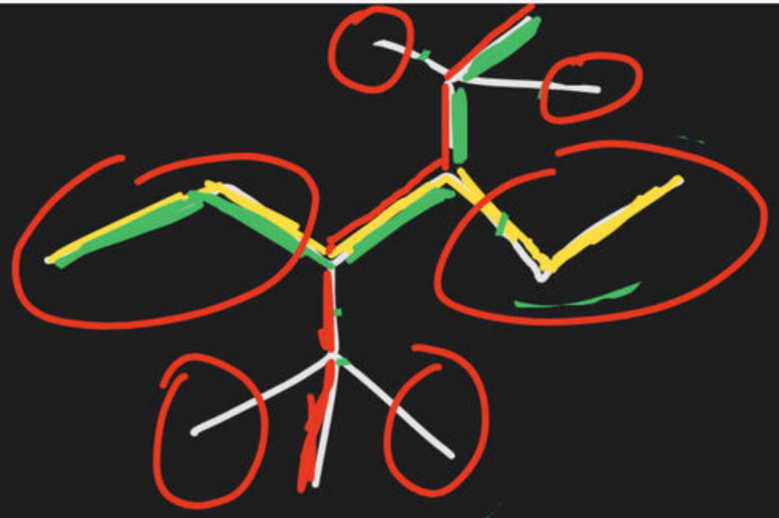
Ex-2 : 

✓ 4 carbon longest chain & 5 Side chains

✗ 4 Carbon longest chain & 2 Side Chains

नहीं ये हो नहीं सकता

Ex-3:



✗ 6C chain & 2 Side chain

✗ 6C chain & 4 Side chains

✓ 6C chain & 6 Side chains

Case (ii) When Compound Contains functional groups (Boss), Multiple Bonds (C=C / C≡C) & Side Chains

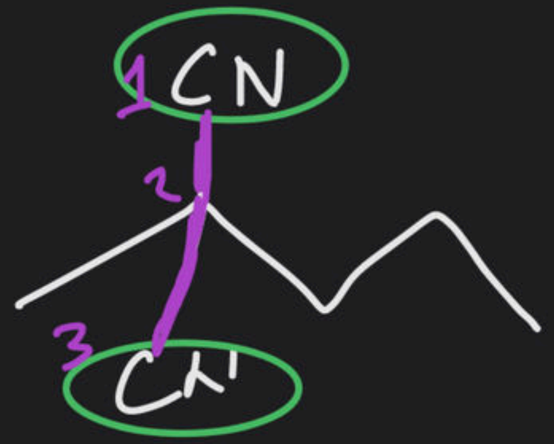
Select that chain which contains highest number of f.group (Boss) then highest no of multiple Bond & at last highest no. of side chains.

F. > M > S

(Functional group) Multiple Bonds Side chains.

(Boss) (C=C & C≡C)

Ex:- (a)

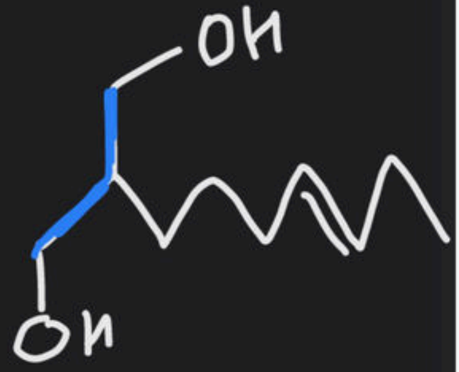


(3 Carbon Principal chain)

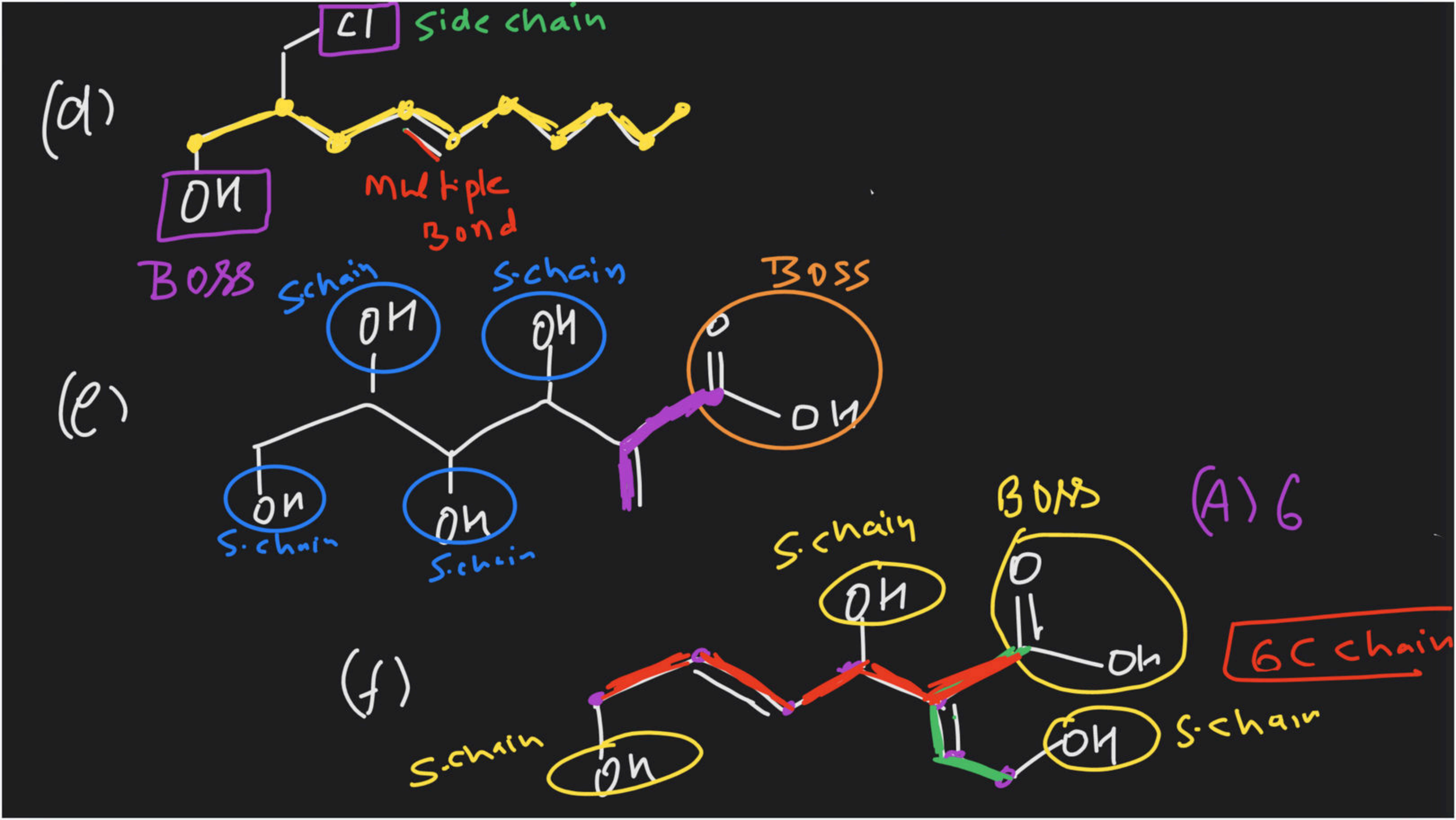
(b)

(4 Carbon Principal Chain)

(c)

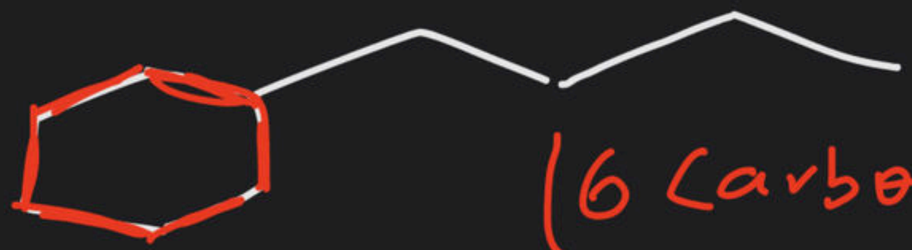


(3 Carbon principal chain)


(d)
Cl
Side chain
OH
Multiple Bond
Boss
(e)
S.chain
S.chain
Boss
OH
OH
O
OH
OH
OH
S.chain
S.chain
(A) 6
(f)
S.chain
Bond
OH
O
OH
6C chain
S.chain
OH
OH
S.chain

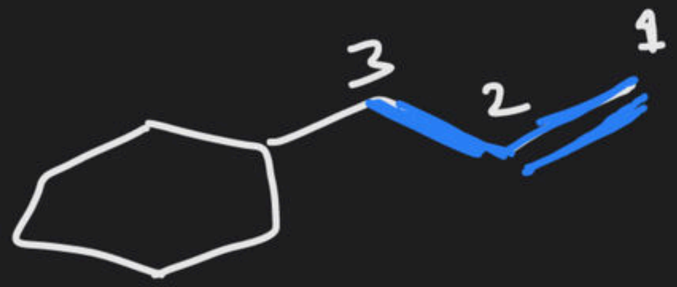
For all Carbon chains principal chain either would be cyclic or acyclic

(g)



(6 Carbon Principal Chain)

(h)



(3 Carbon Principal chain)

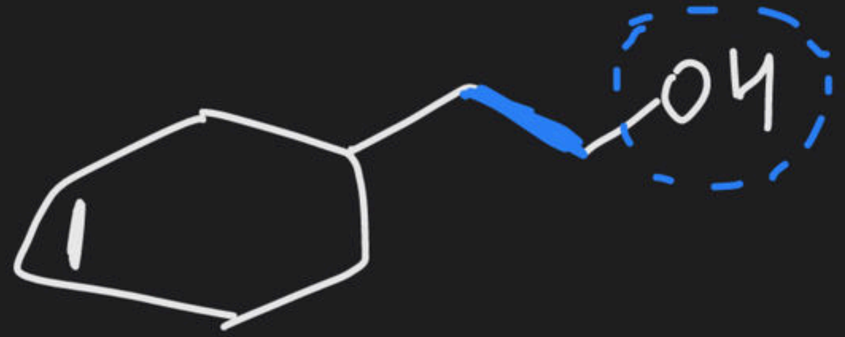
(i)

(2 Carbon Principal chain)

(j)

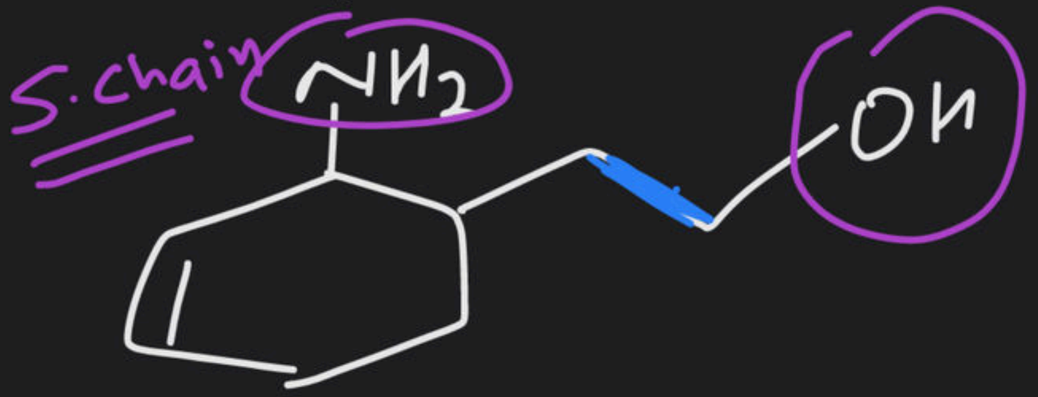
(6 Carbon Principal chain)

(K)



(2 Carbon Main Chain)

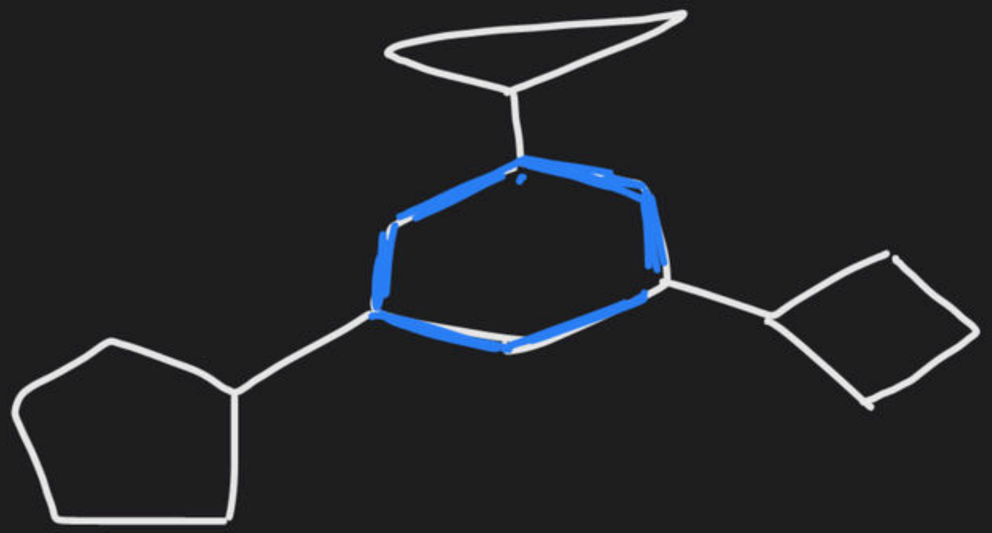
(L)



BOSS

(2 Carbon Main Chain)

(M)



(A) 3

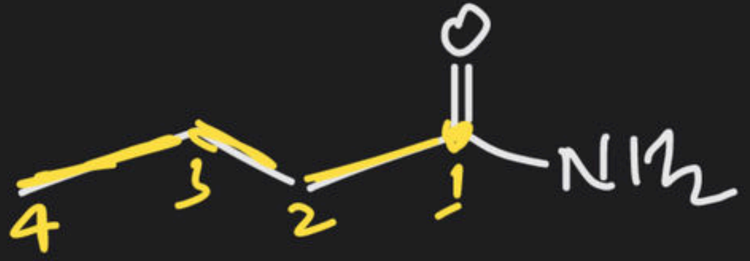
(B) 4

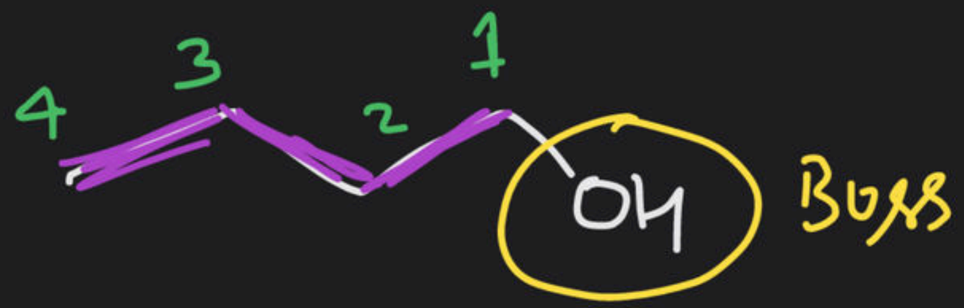
(C) 5

(D) 6

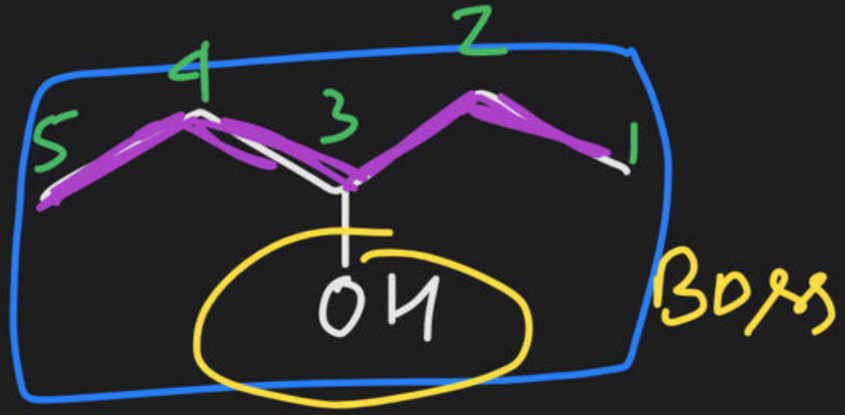
(E)

(N)

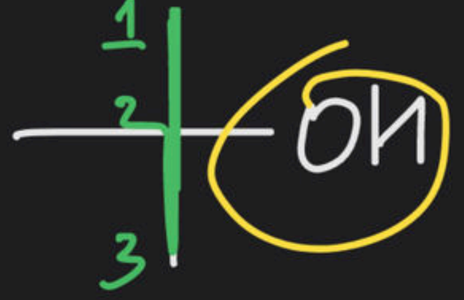




Boss

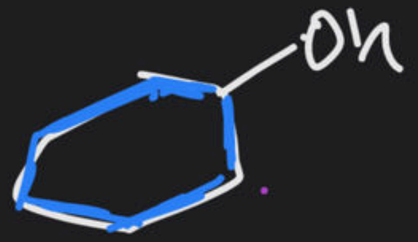


Boss



Boss

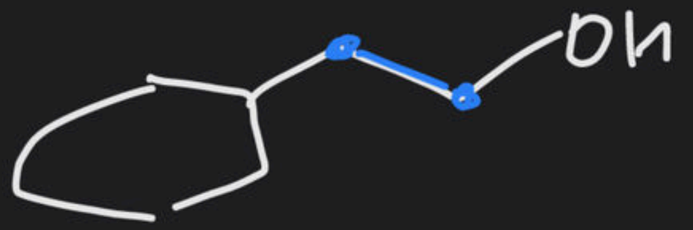
(i)



6 Carbon

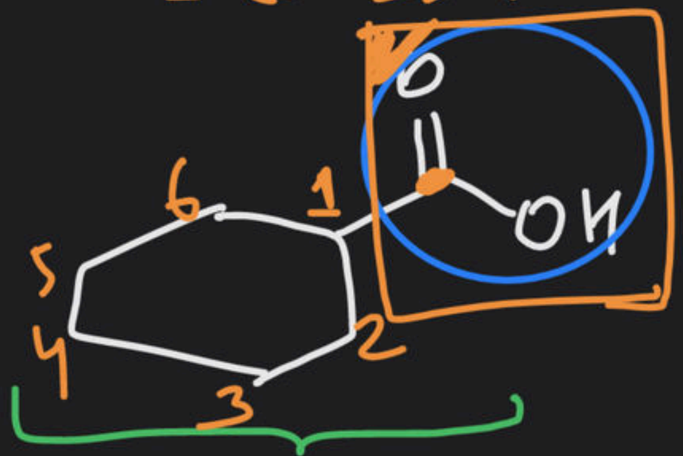
,

1 Carbon

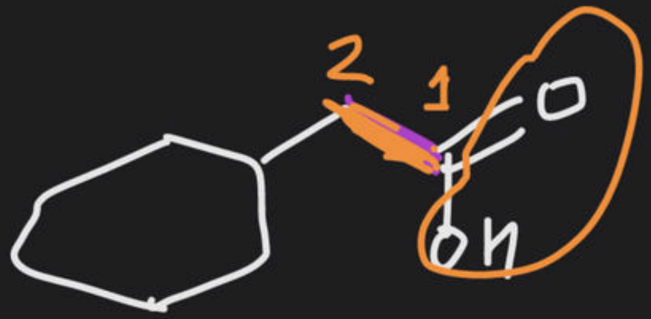


2 Carbon

(ii)



6 Carbon principal chain



(2 Carbon)

When $-CN$, $-CHO$, $-COOH$, $-COOR$, $-COX$, $-CONH_2$ is directly attached with ring then Principal chain is Cyclic Segment