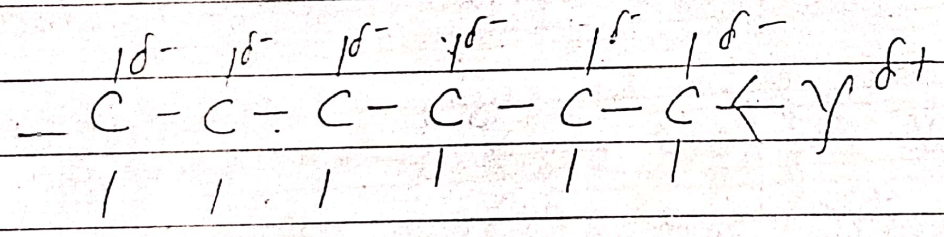
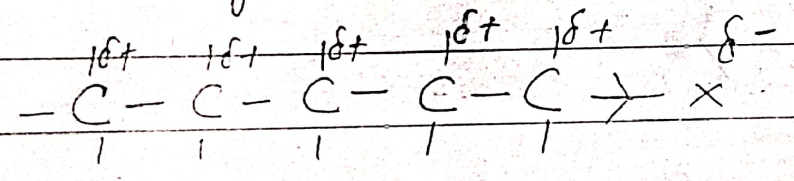


* Inductive effect: →

When there is a polar covalent bond at one of the terminal position in a organic molecule then, there exists imbalance of electron. The relay of such imbalance of electron from one side of the molecule to another side through sigma(σ) bond is called Inductive effect. This is a gradually diminishes and after 5 to 6 C-atoms it becomes approx. nil. This is a permanent effect and may be shown by the following skeleton.



* Types: —

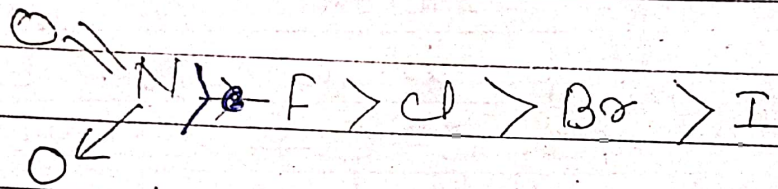
It is the following of types: —

(i) Electron withdrawing inductive effect
(-I effect)

(ii) Electron releasing inductive effect
(+I effect)

(I)*

-I effect \rightarrow when the heteroatom is more -ve than carbon then it attracts the bonded pair of electrons towards itself and becomes partially -ve charged while the C-atom becomes slightly +vely charged. This type of inductive effect is called -I effect the order of such electron withdrawing groups is as under.



electron withdrawing in decreasing form.

(II)*

+I effect \rightarrow when one of the terminal carbon atoms becomes partially -ve charged due to the release of electrons by the attached atoms or groups then the inductive effect arising out is called +I effect.

Alkyl groups are found to be electron releasing in nature and the order of electron releasing tendency is as under.

