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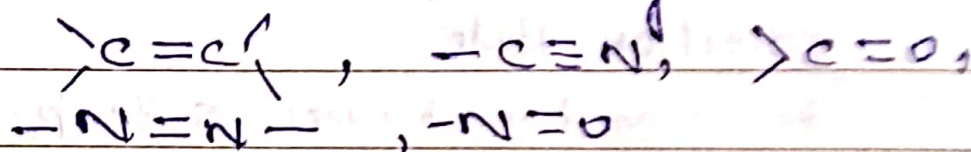
Mo Tu We Th Fr Sa Su

* chromophores:-

chroma = colour.

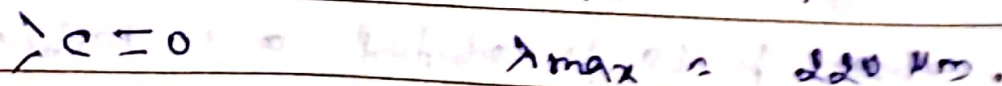
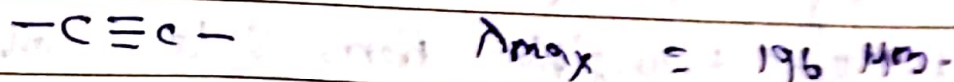
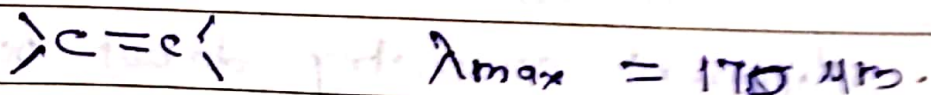
All those compounds which absorb light of wave length (λ) between 400 - 800 nm appears coloured to the human eye. Thus a chromophore are considered as any system which is responsible for imparting colour to the compound.

The chromophoric groups are-



Simple chromophores like ethylene, acetylene undergoes $\pi-\pi^*$ transition in the shorter wave length (λ).

Compound containing atoms as $-\ddot{O}-$, $-\ddot{S}-$, $>N:$ show absorption due to $n-\sigma^*$ transition.



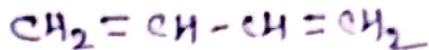
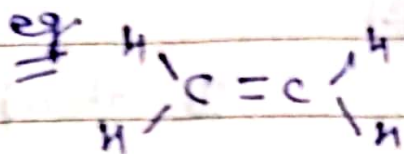


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on conjugation, the absorption maxima shifts to a longer wave length.



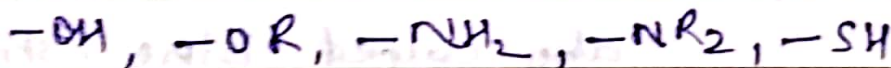
$\lambda_{\text{max}} = 170 \text{ nm}$

$\lambda_{\text{max}} = 217 \text{ nm}$

Auxochromes :-

Any group, which does not itself act as a chromophore but whose presence bring about a shift of the absorption band towards longer wave lengths.

eg -



etc are auxochromes;

eg



$\lambda_{\text{max}} = 255 \text{ nm}$



$\lambda_{\text{max}} = 280 \text{ nm}$



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* Absorption & intensity shift

① Bathochromic shift —

Its absorption maxima appears as longer wave length due to presence of chromophore or change in solvent.

also called Red shift.

② Hypsochromic shift —

Its absorption maxima appears towards shorter wave length. This is due to removal of conjugation or by changing the polarity of the solvent.

also called Blue-shift.

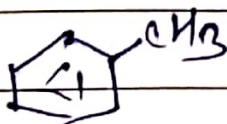
③ Hyper chromic shift —

When the intensity of absorption maxima (ϵ_{max}) increases, called Hyper chromic shift

eg. —



$\epsilon_{max} = 200$



$\epsilon_{max} = 300$



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Q) Hypochromic shift -

When the intensity of absorption maxima (ϵ_{max}) decreases. called Hypochromic shift.

