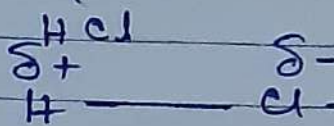
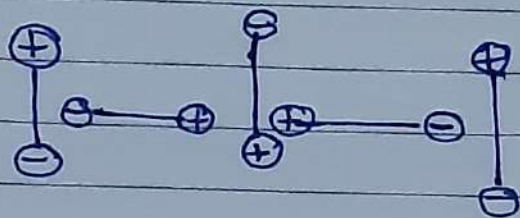


# Rotational Spectroscopy:-

A molecule having permanent dipole moment can show rotational spectra

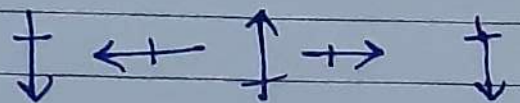


Dipoles are permanent

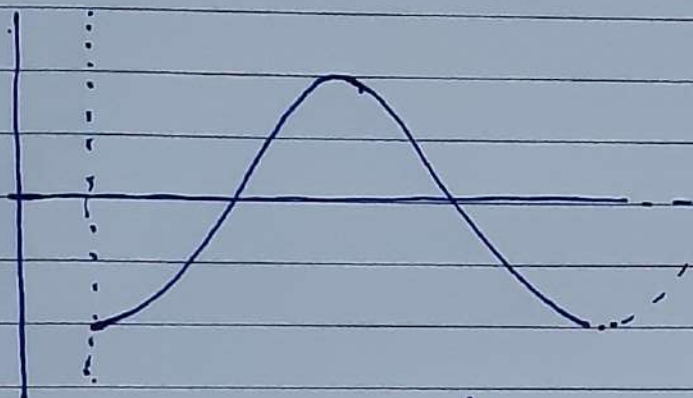


Direction of rotation

(Plane of paper)



Direction of dipoles



Vertical Component of dipole

(Component dipole moment fluctuates regularly)

This fluctuates similar to the form of the fluctuating electric field of radiation.

Interaction can occurs

(Microwave region)

Spectrum

(Here, rotational spectrum)

$\text{H}_2 \rightarrow$  No dipole moment  $\rightarrow$  No rotational spectra