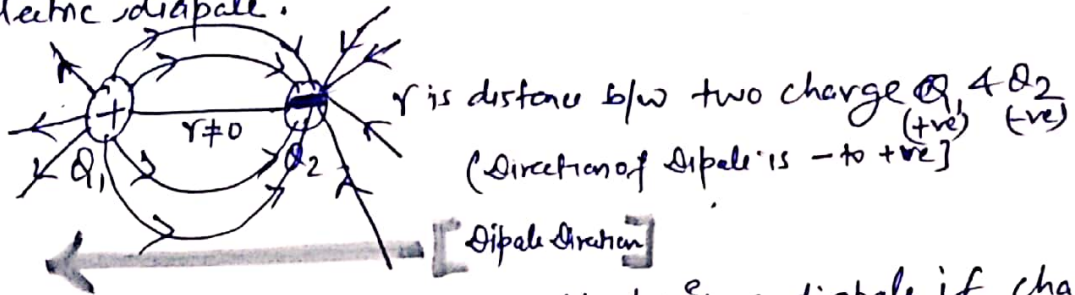
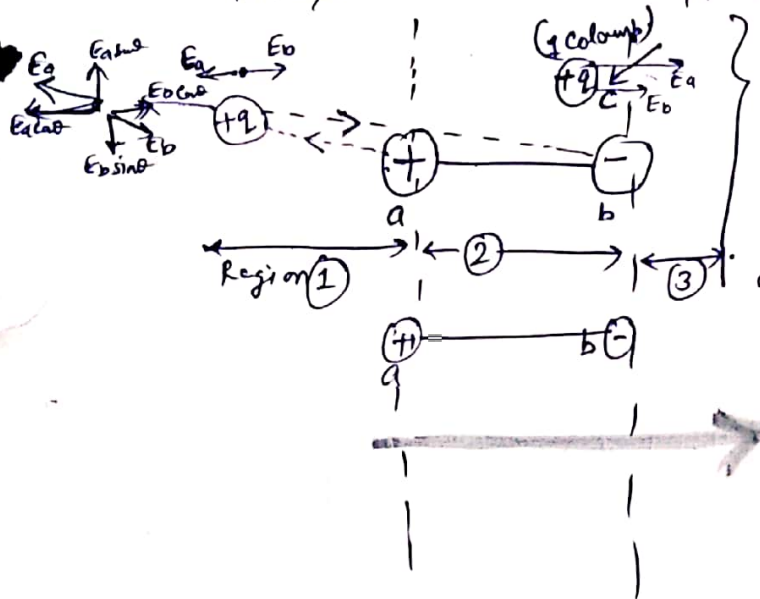


Dipole → two charge are separated with non zero distance is known as electric dipole.



So what we have to discuss is that in a dipole if charge $+q$ interacts then, what happens. (Where Electric field has some magnitude)



three charges has been shown in the figure & three region has been shown as - 1, 2, 3.

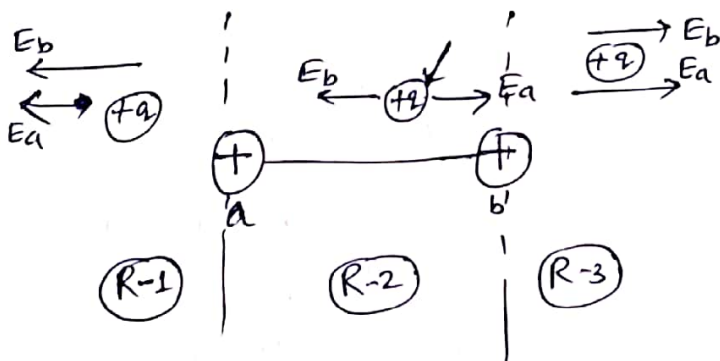
then force acts in region (1) due to Dipole on $+q$ charge, then E_a & E_b Both opposite then in Region (1) No electric field, we can say that $E_a - E_b = 0 = E$

Same has happened in Region (3) $\Rightarrow$ i.e. $E = 0$

So we can say that only E act in Region (2)

So E has only magnitude i.e. in Rightward direction. [So we can say E & Dipole Direction are opposite]

In above discussion we have to consider magnitude of charge a & b is like that if E_a & E_b act opposite then they are cancelling each other.



are positive
So if two charges then only R-2 has

$$E_a = E_b = 0$$

& E exists in Left & Right direction

[as E has a definition of $\rightarrow$ force applied on unit positive charge.]

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