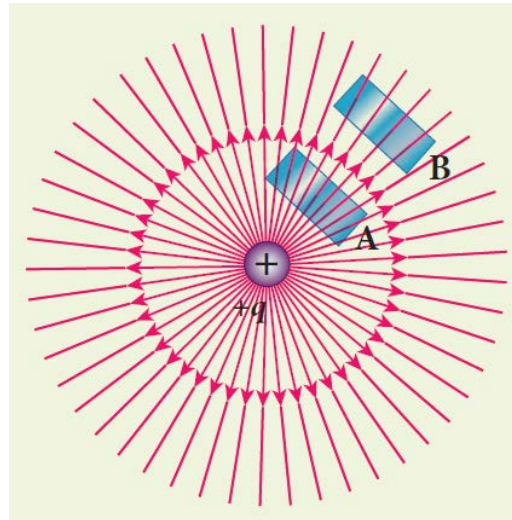


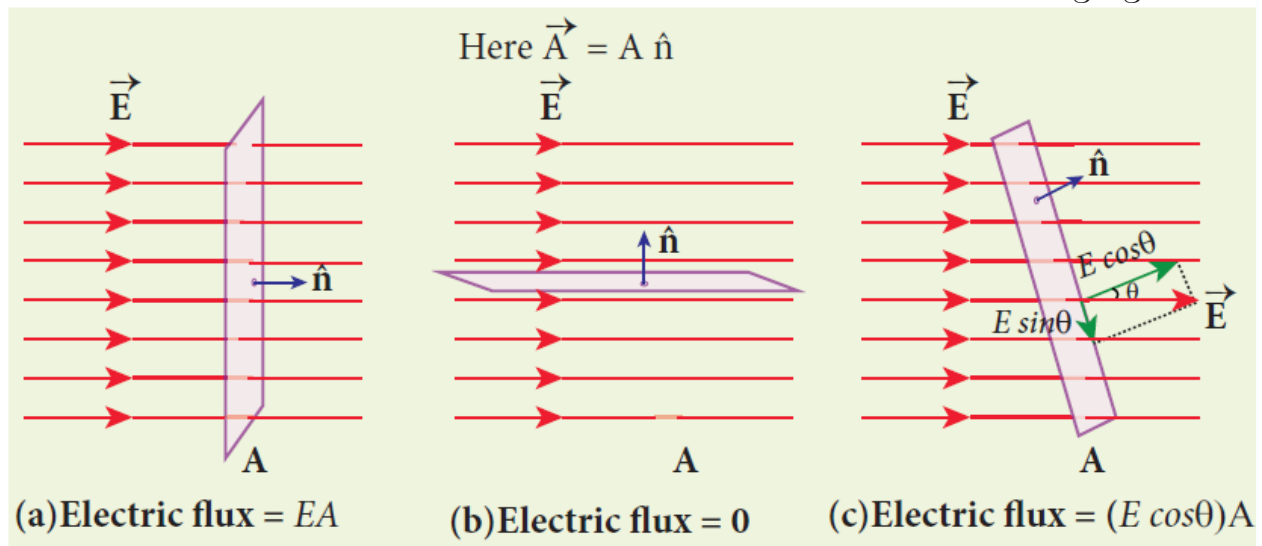
Electric Flux

The number of electric field lines crossing a given area kept normal to the electric field lines is called electric flux. Electric flux is a scalar quantity and it can be positive or negative. For a simpler understanding of electric flux, the following figure



Electric flux for uniform Electric field

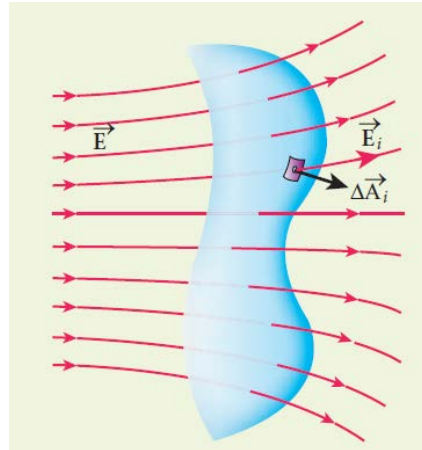
Consider a uniform electric field in a region of space. Let us choose an area A normal to the electric field lines as shown in the following figure



Electric flux in a non uniform electric field and an arbitrarily shaped area

Suppose the electric field is not uniform and the area A is not flat then the entire area is divided into n small area segments such that each area

element is almost flat and the electric field over each area element is considered to be uniform.



Electric flux over a closed surface

Suppose a closed surface is present in the region of the non-uniform electric field as shown in the following figure

