$$\mu = \sin^{-1} i = \sqrt{\left(1 - \frac{81}{f^2}\right)}$$

Angle of incidence $\mu = \sin^{-1} i$

For a given frequency $f = f_{muf}$

i) Skip distance

$$\frac{F_{muf}}{f_c} = \sqrt{\left(1 + \frac{D^2}{4h^2}\right)}$$

$$\left(\frac{f^2_{muf}}{f^2_c}\right) = 1 = \left(\frac{D_{Skip}}{2h}\right)^2$$

$$D_{Skip} = 2h \sqrt{\left(\frac{f_{muf}}{f_c}\right)^2 - 1}$$

Q3(a) Discuss in detail about the mechanism Refraction in sky wave propagation.

Ans: Refraction in sky wave propagation

(i) Propagation of space and ground wave limited by the curvature of earth

(ii) Propagation over long distance by sky wave propagation.

(iii) Radio wave fr. 2MHz to 30MHz are from Transoceanic