**Q5.** A certain particle called meson has a life time 2 ×10-6sec; a] What is the mean life time when the particle is travelling with a speed of 2.9994× 108 m/sec?; b] How far does it go during one mean life?

**Given:-** 2 ×10-6sec ; v= 2.9994× 108 m/sec

**Formula:-** ; distance (d) = Speed (v) x time (t)

**Solution:-** =31.63 x 10-6 sec

Distance travelled by meson during mean life time,

d = (2.994x108)(31.63x10-6)

=9470m

**Ans:- The mean life time is 31.63x10-6sec and the distance is 9470m.**