**1. Calculate the number of fibers in the cross section of a yarn of 30 Ne, if the constituent fiber’s fineness is 3.8 MIC.**

**Solution:**

No. of fiber in the cross section= $\frac{Yarn count in Tex system}{Fibre fineness in Tex system}$ --------- (1)

Now, 30 Ne should be converted to Tex.

We know, Ne \* Tex = 590.5

Or, Tex = 590.5/Ne

 = 590.5/30

 = 19.68

 = 20 (Approximate)

So, 30 Ne = 20 Tex (Approximate)

Again, 3.8 MIC

= 3.8 µg / 1inch

= 3.8 \* 10-6 gram / 1 inch

= 3.8 gram /2.54 cm \* 106

= 3.8 gram / 2.54 \* 10-2 \* 106 m

= 3.8 gram / 2.54 \* 104 m

= 3.8 gram / 2.54 \* 10 \*1000 m

= 3.8 gram / 25.4 \* 1000 m

= 0.1496 gram / 1000 m

So, 3.8 MIC = 0.1496 Tex

Now, we have to put the values in equation no. (1)

No. of fiber in the cross section= $\frac{Yarn count in Tex system}{Fibre fineness in Tex system}$

 = $\frac{20}{0.1496}$

 = 133.689

 = 134 (Approximate)