Along straight wire carries a current of 35 A. What is the magnitude of the field B at a point 20 cm from the wire?

Current in the wire, I = 35 A

Distance of a point from the wire, r = 20 cm = 0.2 m

Magnitude of the magnetic field at this point is given as:

$$|\vec{B}| = \frac{\mu_0}{4\pi} \frac{2l}{r}$$

Where,

μ_0 = Permeability of free space

$= 4\pi \times 10^{-7} \text{ T m A}^{-1}$

$$|\vec{B}| = \frac{4\pi \times 10^{-7}}{4\pi} \times \frac{2 \times 35}{0.2}$$

$$= 3.5 \times 10^{-5} \, T$$

Hence, the magnitude of the magnetic field at a point 20 cm from the wire is 3.5×10^{-5} T.