

$$B = (4\pi \times 10^{-7} \text{ Hm}^{-1}) \times (150 \text{ Am}^{-1}) = 0.188 \text{ mT}$$

b) $B = 5000 \times (0.188 \text{ mT}) = 0.94 \text{ T}$

Using $(B/\mu_0) = H + M$ we can write

$$\frac{0.94}{4\pi \times 10^{-7}} = 150 + M \Rightarrow M = 7.5 \times 10^5 \text{ Am}^{-1}$$

5. a) $H = ni = \frac{1500}{0.75 \text{ m}} \times (0.24 \text{ A}) = 480 \text{ Am}^{-1}$

b) $B = \frac{4\pi K_m H}{10^7} = \frac{4\pi}{10^7} \times (1500) \times (480) = 0.90 \text{ T}$