

102. The magnetic flux is

$$\begin{aligned}\Phi_B &= BA = \left(\frac{\mu_0 i_0 N}{2\pi r} \right) A \\ &= \frac{(4\pi \times 10^{-7} \text{ H/m})(0.800 \text{ A})(500)(5.00 \times 10^{-2} \text{ m})^2}{2\pi(0.150 \text{ m} + 0.0500 \text{ m}/2)} \\ &= 1.15 \times 10^{-6} \text{ Wb} .\end{aligned}$$