105. The area enclosed by any turn of the coil is πr^2 where $r = 0.15$ m, and the coil has $N = 50$ turns. Thus, the magnitude of the induced emf, using Eq. 31-7, is

$$|\mathcal{E}| = N\pi r^2 \left|\frac{dB}{dt}\right| = \left(3.53 \text{ m}^2\right) \left|\frac{dB}{dt}\right|$$

where $\left|\frac{dB}{dt}\right| = (0.0126 \text{ T/s})|\cos \omega t|$. Thus, using Ohm's law, we have

$$i = \frac{|\mathcal{E}|}{R} = \frac{(3.53)(0.0126)}{4.0} |\cos \omega t| \quad .$$

When $t = 0.020$ s, this yields $i = 0.011$ A.