Answers Exam 3 2017

1. $r < A \quad \vec{B} = \frac{\mu_0 i_2}{2\pi A^2} r$ ccw

$A < r < D \quad \vec{B} = \frac{\mu_0 i_2}{2\pi r}$ ccw

$D < r < F \quad \vec{B} = \frac{\mu_0}{2\pi r}\left(i_2 - \frac{i_1(\pi r^2 - \pi D^2)}{\pi F^2 - \pi D^2}\right)$ ccw

$r > F \quad \vec{B} = \frac{\mu_0}{2\pi r}(i_2 - i_1)$ ccw

2. $i = \frac{2F(R^2 + D^2)^{3/2}}{\mu_0 q \tau R^2}$ ccw

3. $i = \frac{\mu_0 i_0 W}{2\pi R} \omega \cos\omega t \ln\frac{D+H}{D}$; $R = \rho\, 2(W+H)/A$

4. $Q(t) = C B_0 A_0 \gamma \left(1 - e^{-\frac{t}{RC}}\right)$