

Answers to the Final Test Review for Chapters 30-31

30-R1: Correct A

30-R2: (a) 1.25 A ; (b) 1.67 A

30-R3: 1739 W

30-R4: (a) $N = 2833$ turns ; (b) $emf_s = 0.248$ V ; (c) $i = 8.7\mu\text{A}$; (d) $U_B = 22.89$ mJ

30-R5: (a) *follows from* $\left(\frac{1}{LC} - \frac{R^2}{4L^2}\right) > 0$; (b) $\omega' = 400$ rad/s; (c) $R_{add} = 32\Omega$

31-R1: (a) 71.55 V; (b) 50.6 V; (c) 0.453 A

31-R2: *correct E*

31-R3: *correct #3*

31-R4: $N_1/N_2 = 9.227$

31-R5: (a) $V_C(\text{rms}) = 147.9$ V