

King Fahd University of Petroleum & Minerals
Department of Electrical Engineering

Quiz # 5

EE460 Power Electronics

Jan. 2008

Name: _____ ID: _____ Grade: _____

The dc chopper in Fig. 1 has inductive load of $R=10\Omega$ and $L=10\text{mH}$. The input voltage value is $V_s = 220\text{V}$, $f = 1\text{kHz}$, $E=1100\text{V}$, and $k=0.5$. Calculate:

- (a) the average load current I_a .
- (b) the rms load current I_0 .
- (c) the rms value of the chopper current I_R .
- (d) the effective input resistance R_i .
- (e) the voltage across the free wheeling diode.

