

King Fahd University of Petroleum & Minerals  
Department of Electrical Engineering

Quiz # 4

EE460 Power Electronics

December 2007

Name: \_\_\_\_\_ ID: \_\_\_\_\_ Grade: \_\_\_\_\_

Single-phase full-wave ac voltage controller in Fig. 1 has a resistive load of  $R=5\Omega$  & the rms voltage value is 120V with 60 Hz frequency input. The rms output voltage  $V_0 = 84$  V. Determine:

- (a) the delay angle  $\alpha$ .
- (b) the input power factor, PF.
- (c) the average current of thyristors  $I_A$ .
- (d) the rms current of thyristors  $I_R$ .
- (e) draw the voltage across thyristor  $T_2$ .

