Rose-Hulman Institute of Technology

ECE 207 Fall 2004

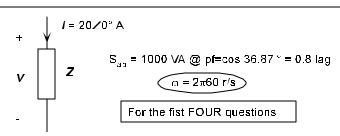
Quiz 2

Name

CM

Score

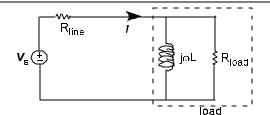
Mark **each** True/False as either **T** or **F**. (1pt each)



- \_\_\_  $\mathbf{S}_{ab} = (800+j600) \text{ VA} = 1000 \angle 36.87^{\circ} \text{ VA}.$
- The energy absorbed by Z in three complete cycles of v(t) is 40J.
- $v(t) = 50\sqrt{2} \cos(2p 60t 36.87^{\circ}) \text{ V}$

Why or why not?

Z = (2 - j1.5) Ω.

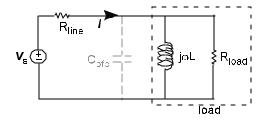


for the next THREE questions

 $\_$  As L increases, the power absorbed by  $R_{\text{line}}$  will decrease.

Why or why not?

- \_\_\_\_ As L increases, the reactive power absorbed by the load will increase.
- Given  $R_{\text{line}}$  and  $R_{\text{load}}$ ,  $\eta$  will be the maximum possible when L=0.



Pabeothed by load = 100W

for the last THREE questions

\_\_\_\_ The required C<sub>pfc</sub>, in Farads, increases as the inductance, in Henries, increases. Why or why not? \_\_\_\_

\_\_\_ As the load pf is increased toward 1, | I | will decrease which will increase the %VR.

\_\_\_ Decreasing  $R_{\text{line}}$  will allow a smaller  $C_{\text{pfc}}$  to be used to achieve a given  $\%\eta$  and %VR.