CASE WESTERN RESERVE UNIVERSITY

Case School of Engineering

Department of Electrical Engineering and Computer Science

ENGR 210. Introduction to Circuits and Instruments (4)

Quiz No. 1

1/23/04

Name (Section): _____

PUT ANSWERS IN THE SPACE PROVIDED AND SHOW YOUR WORK

Problem 1 (10 points)

A particular circuit has three devices with electrical parameters as shown below. Complete this table and indicate whether each device is absorbing (**A**) or delivering (**D**) power. Current is defined to be positive when it flows into the positive terminal of the device.

Device	Voltage	Current	Power	A/D
1	+5 V	0.25 A	+1.250 W	А
2	+2.5 V	0.25 A	+ 0.625 W	А
3	- 7.5 V	0.25 A	-1.875 W	D

Problem 2 (5 points)

Complete the following table using the first row as your example.

Quantity	Numerical Value	Physical Unit	
0.730 nJ	0.73X10^-9	Joule (energy)	
24.6 kV	2.46x10^4	Volts (energy loss/electron)	
0.36millimicroΩ	0.36x10^-9	Ohms (resistance)	
0.1 µC	1x10^-7	Coulombs (charge)	

0.99 mA	9.9x10^-4	Amperes (current)

Problem 3 (5 points) You are on a CO-OP assignment and use a Keithley parameter analyzer to measure the I-v characteristics of an electronic device. It gives you the I-v curve shown below. Indicate whether the following statements are true or false.



TRUE	FALSE	Statement
	х	The device is linear.
х		The device is passive.