

Name Tanner Gibson Date \_\_\_\_\_

Score \_\_\_\_\_ Instructor (Mr. Bell)

The following questions should be answered in three ways: calculation using your calculator, simulation using MultiSIM and test using Elvis II.

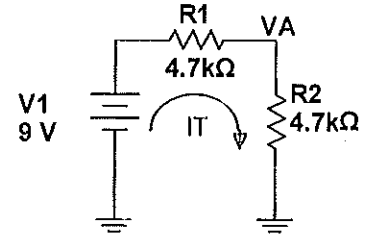
1. Find the following:

Find  $I_T$ ,  $R_T$  and  $V_A$  via analysis (show all work.)

$R_T =$  \_\_\_\_\_

$I_T =$  \_\_\_\_\_

$V_A =$  \_\_\_\_\_



Find  $I_T$ ,  $R_T$  and  $V_A$  via simulation (printout simulation schematic and outputs)

Find  $I_T$ ,  $R_T$  and  $V_A$  via test (diagram your test setup and measure  $R_T$ ,  $I_T$  and  $V_A$ ).

$R_T = 9.4k\Omega$   
 $I_T = 959.23\mu A$   
 $V_A = 4.5V$

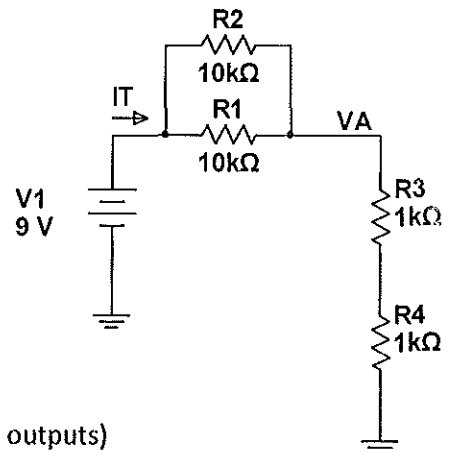
2. Find the following:

Find  $I_T$ ,  $R_T$  and  $V_A$  via analysis (show all work.)

$R_T =$  \_\_\_\_\_

$I_T =$  \_\_\_\_\_

$V_A =$  \_\_\_\_\_



Find  $I_T$ ,  $R_T$  and  $V_A$  via simulation (printout simulation schematic and outputs)

Find  $I_T$ ,  $R_T$  and  $V_A$  via test (diagram your test setup and measure  $R_T$ ,  $I_T$  and  $V_A$ ).

$R_T = 7k\Omega$   
 $I_T = 1.286mA$   
 $V_A = 2.571V$

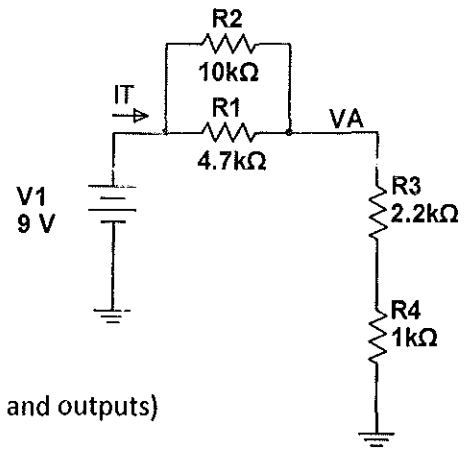
3. Find the following:

Find  $I_T$ ,  $R_T$  and  $V_A$  via analysis (show all work.)

$R_T =$  \_\_\_\_\_

$I_T =$  \_\_\_\_\_

$V_A =$  \_\_\_\_\_



Find  $I_T$ ,  $R_T$  and  $V_A$  via simulation (printout simulation schematic and outputs)

Find  $I_T$ ,  $R_T$  and  $V_A$  via test (diagram your test setup and measure  $R_T$ ,  $I_T$  and  $V_A$ ).

$R_T = 6.397\text{ k}\Omega$

$I_T = 1.409\text{ mA}$

$V_A = 4.502\text{ V}$

4. Find the following:

Find  $I_T$ ,  $R_T$  and  $V_A$  via analysis (show all work.)

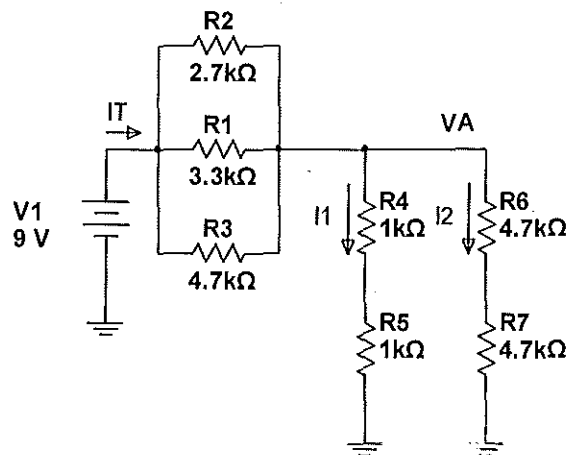
$R_T =$  \_\_\_\_\_

$I_T =$  \_\_\_\_\_

$I_1 =$  \_\_\_\_\_

$I_2 =$  \_\_\_\_\_

$V_A =$  \_\_\_\_\_



Find  $I_1$ ,  $I_2$ ,  $I_T$ ,  $R_T$  and  $V_A$  via simulation (printout simulation schematic and outputs)

Find  $I_T$ ,  $R_T$  and  $V_A$  via test (diagram your test setup and measure  $R_T$ ,  $I_T$  and  $V_A$ ).

$R_T = 2.778\text{ k}\Omega$

$I_T = 3.24\text{ mA}$

$I_1 = 2.672\text{ mA}$

$I_2 = 568.434\text{ }\mu\text{A}$

$V_A = 5.343\text{ V}$

5. Find the following:

Find  $R_{TH}$ ,  $V_{TH}$  and  $R_L$  for maximum power transfer via analysis (show all work.) Create a plot in Excel for the power transfer.

$$R_{TH} = 10\Omega$$

$$V_{TH} = 4.5V$$

$$R_L = \text{[scribble]} 10\Omega$$

$$V_A = 4.091V$$

Find  $R_{TH}$ ,  $V_{TH}$  and  $R_L$  for maximum power transfer via simulation (printout simulation schematic and outputs).

