

PART A: MULTIPLE CHOICE (10 MARKS)

1	2	3	4	5	6	7	8	9	10
b	b	a	b	b	a	c	a	c	c

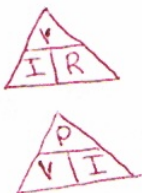
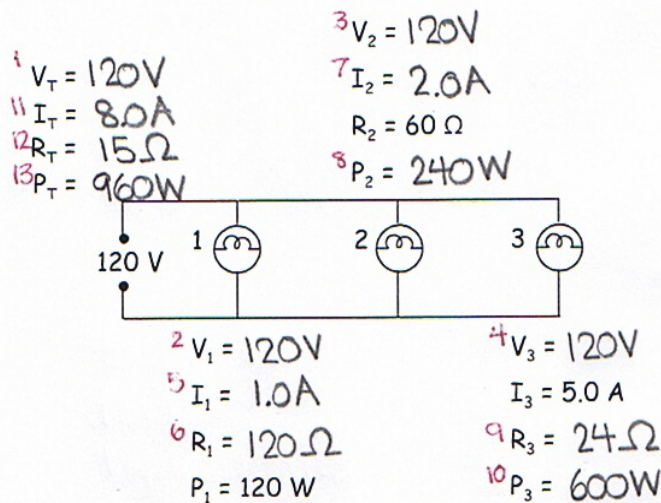
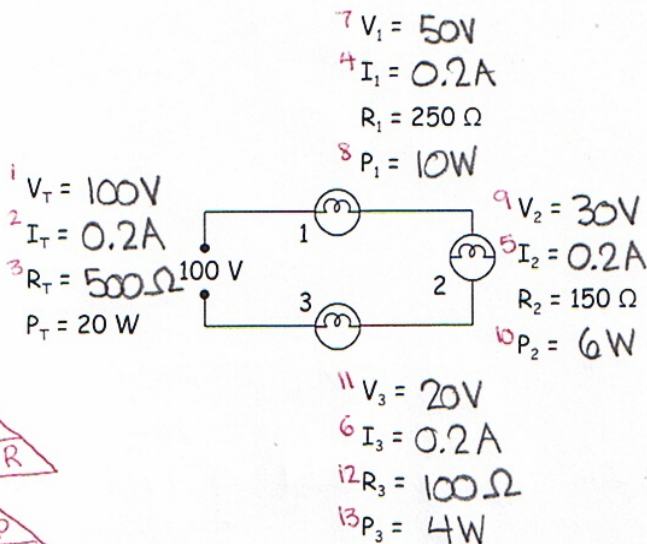
PART B: MATCH (5 MARKS)

1	2	3	4	5
B	F	E	J	A

PART C: SHORT ANSWER (40 MARKS)

Answer questions 1, 2 and 3 in the space provided. Use the back of this sheet to answer question 4. Don't forget to use GRESS!

{26} 1. Determine V, I, R, and P for each component and the totals for the following circuit.



2. A CD player requires 240 J of energy to operate, yielding 200 J of sound energy.

- {3} (a) How efficiently is the sound generated?
 (1) (b) Where does the "lost" energy go?

a) $E_{in} = 240J$
 $E_{out} = 200J$

b) lost as heat energy

$eff = E_{out} / E_{in}$
 $= 200J / 240J$
 $= 0.8333...$

$eff = 83.3\%$

{3} 3. If the monthly electricity bill for a household is \$25.00 how much energy in kW·h was used? Assume a unit cost of \$0.06/kW·h.

cost = \$25.00 ✓
 rate = \$0.06 / kW·h

$E = cost / rate$
 $= \$25.00 / \$0.06 / kW·h$
 $= 416.66...$

$E = 416.7 kW·h$

4. Suppose that 500 000 households across Canada each leave a 100 W bulb on unnecessarily for 90 h.

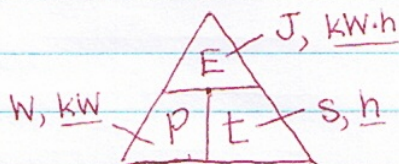
- {4} (a) Calculate the total amount of wasted energy in kilowatt hours (kW·h).
 {3} (b) Calculate the total cost of the wasted energy at \$0.20/kW·h.

SNC1D

PHYSICS: PART C

QUIZ #4

- 4.) 500000 households
 $P = 100\text{W} = 0.10\text{ kW}$
 $t = 90\text{h}$



* to get "kW·h"
 P must be in
 "kW" & t in "h"

- a) 1 house $E = Pt$
 $= (0.10\text{ kW})(90\text{h})$
 $E = 9.0\text{ kW}\cdot\text{h} \quad \times 500000$

$$E = 4500000\text{ kW}\cdot\text{h}$$

- b) rate = \$0.20 / kW·h

$$\text{cost} = E \cdot \text{rate}$$

$$= (4500000\text{ kW}\cdot\text{h})(\$0.20/\text{kW}\cdot\text{h})$$

$$\text{cost} = \$900000$$