Name _____Classes 10A,10B,10C MOCK_V1 Physics 03/10/14
Must Show all Work

Chapter Test #1: Chapters 8

Matching
(WORTH 40 pts total, 5 points each)

Match the following terms with the correct definition. There is at least one extra term that will not match any of the definitions.

a.   R
b.   DC
c.   VIt
d.   Q
e.   electric force
f.   the sum of individual resistors
g.   AC
h.   P
i.   the sum of the inverse of the resistors is equal to $\dfrac{1}{R_{TOTAL}}$
j.   V
k.   Ohm's Law
l.   Ω·m
m.   eV

H 1. has units of Watts

C 2. electrical energy has this possible formula

D 3. has units of C

I 4. resistors in parallel

G 5. is the type of power relayed to your home (mains power)

F 6. resistors in series

A 7. has units of Ω
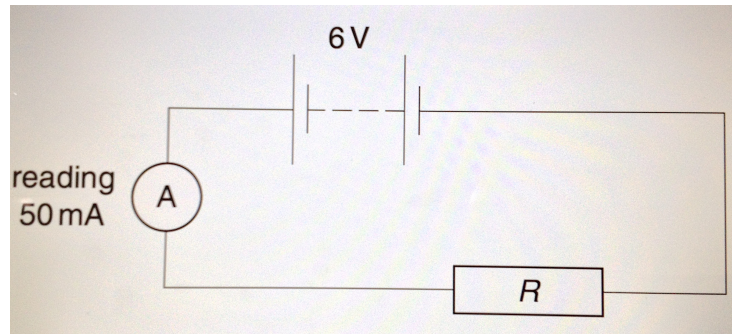
L 8. the units for resistivity

Must Show all Work

(Questions 9 - 11 are WORTH 10 points each)

A 9. An electron experiences an Electric Field of strength E = 1.0 x 10^{-2} $\frac{N}{C}$.

What is the Electric Force on the electron if Q = -1.60 x 10^{-19} C?

a. F_e = - 1.60 x 10^{-21} N
b. F_e = - 0.62 x 10^{-21} N
c. F_e = -1.60 x 10^{-17} N
d. F_e = - 0.62 x 10^{-17} N

C 10. Consider the schematic diagram below and answer the following question.


The resistor R (in Ω) has a reading of:

Use: V = IR

a. 8.0 x 10^{-2}
b. 1.39 x 10^{-1}
c. 1.2 x 10^{2}
d. 3.0 x 10^{2}

(Question 12 - 14 are WORTH 7 points each)

11. Draw a diagram for two point charges experiencing an Electric Field. The charges are identical in every way except for their charge. Draw at least 15 lines so that the "shape" or "pattern" of the Electric Field is clearly visible.

See Page 174. The bottom of this page shows for tow equal but opposite charges. Here the question asks for two equal charges. So the picture should be something like this:
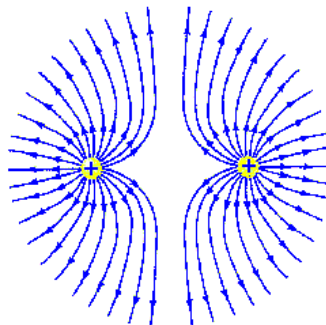
12. Define the following terms, and give an example of each term:

Induction: **See Page 172. Read the entire page.**

The process of charging an uncharged object by polarizing the object, resulting in a net charge on the object once the object is earthed.

Resistivity: **See Page 185. Read the top portion of the page.**

A constant for a material at a particular temperature. It is measured in Ω·m.

EMF: **See Page 178. Read the bottom portion of the page.**

The maximum PD of a circuit when there is no current flowing through the wire.

(Problems 15 - 16 are WORTH 9 pts each)

Choose ONLY one of the two problems, circling the one to be graded

13. A two-resistor circuit diagram is shown below. R = 50 Ω. **See Sections 8.09 & 8.10**

(a) What is the Equivalent Resistance when the two resistors are combined into one?

R = 37.5 Ω

(b) How much current flows through 3R? **Use V = IR so I = 0.08 A**

(c) How much current flows through R? **Use V = IR so I = 0.24 A**

(d) What is the Voltage in the 3R resistor? **PAR-V so 12 V**

(e) What is the Voltage in the R resistor? **PAR-V so 12 V**

$$\varepsilon = PD = 12\ V$$

3R

R