

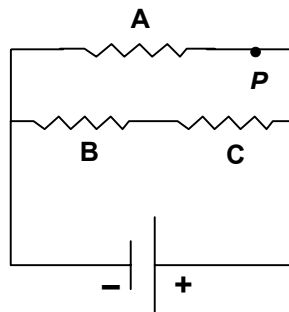
Physics 112
Quiz #17
October 30, 2000

Name: _____

IF YOU WANT A QUESTION GRADED OUT OF THREE POINTS (-1 [MINUS ONE] FOR WRONG ANSWER!!) WRITE "3" IN SPACE PROVIDED ON EACH QUESTION.

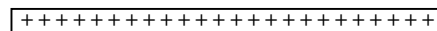
1. Suppose that a loop of wire is in the xy plane and carries a clockwise current. Which of the following choices includes **only** magnetic field directions that **would** cause a torque on the loop [Circle **two** choices from A-E]:
- A. magnetic field pointing in the x direction and magnetic field pointing in the y direction
 - B. magnetic field pointing in the x direction and magnetic field pointing in the z direction
 - C. magnetic field pointing in the y direction and magnetic field pointing in the z direction
 - D. magnetic field pointing in the x direction and magnetic field pointing in the $-y$ direction
 - E. magnetic field pointing in the y direction and magnetic field pointing in the $-z$ direction

2. Resistors A , B , and C all have equal resistance. Which of the following would **increase** the power dissipated by resistor A ?
- A. Decrease the resistance of resistor A .
 - B. Increase the resistance of resistor A .
 - C. Decrease the resistance of resistor B .
 - D. Increase the resistance of resistor B .
 - E. Decrease the battery voltage.
 - F. Introduce another resistor at point P .



Grade out of 3? Write "3" here: _____

3. Two parallel plates have equal and opposite charges, as shown. There are no charges between the plates. What can be said about the electric potential at point B ?
- A. The electric potential at B is higher than it is at A .
 - B. The electric potential at B is lower than it is at A .
 - C. The electric potential at B is the same as it is at A , but not zero.
 - D. The electric potential is zero at both A and B .
 - E. There is not enough information given to answer this question.



A •

B •

Grade out of 3? Write "3" here: _____

4. A uniform magnetic field points in the positive x direction; a straight wire carrying a current is sitting in this field. Rank in order the **magnitude of the force** exerted on this wire for the following five orientations of this wire:
- A. along the x axis
 - B. along the y axis
 - C. along the z axis
 - D. in the xy plane, but not parallel to either the x or y axes
 - E. in the yz plane, but not parallel to either the y or z axes

Answer: (largest) _____ **(smallest)** [Use "=" sign if necessary]