PHYS 2326 University Physics II – Class-2(afternoon)

<p style="text-align:center">**QUIZ-#2**
CHAPTERS: 27,28,29,30</p>

<p style="text-align:center">**JULY 23, 2013**</p>

1. If a mile of 24-gauge copper wire has a resistance of 0.14 kΩ and the resistivity of copper is 1.7×10^{-8} $\Omega \cdot$ m, what is the diameter of the wire? (1 mile = 1.6 km)

   a. 0.40 mm
   b. 0.50 mm
   c. 0.63 mm
   d. 0.80 mm
   e. 0.25 mm

2. A light bulb is rated at 30 W when operated at 120 V. How much charge enters (and leaves) the light bulb in 1.0 min?

   a. 17 C
   b. 15 C
   c. 14 C
   d. 13 C
   e. 60 C

3. What is the current in the 10-Ω resistor ?
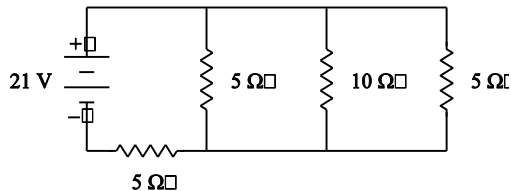
   a. 0.60 A
   b. 3.0 A
   c. 1.2 A
   d. 2.4 A
   e. 0.30 A

4. A segment of wire carries a current of 25 A along the x axis from $x = -2.0$ m to $x = 0$ and then along the y axis from $y = 0$ to $y = 3.0$ m. In this region of space, the magnetic field is equal to 40 mT in the positive z direction. What is the magnitude of the force on this segment of wire?

   a.   2.0 N
   b.   5.0 N
   c.   1.0 N
   d.   3.6 N
   e.   3.0 N

5. Each of two long straight parallel wires separated by a distance of 16 cm carries a current of 20 A in the same direction. What is the magnitude of the resulting magnetic field at a point that is 10 cm from each wire?

   a.   57 μT
   b.   80 μT
   c.   64 μT
   d.   48 μT
   e.   40 μT