

**King Fahd University of Petroleum and Minerals**  
**Physics Department**  
**Phys-212: Modern Physics**  
**Spring 2002**

**Quiz # 1**

**Name:**

**ID#:** \_\_\_\_\_

An electron is moving with a speed of  $5.0 \times 10^4$  m/s.

- a. Find the de Broglie wavelength of the electron.
- b. If when doing the measurements, it was possible to resolve 2% difference in the electron speed, what will be the uncertainty in the electron position?

Constants:  $m = 9.11 \times 10^{-31}$  kg  
 $e = 1.6 \times 10^{-19}$  C  
 $h = 6.626 \times 10^{-34}$  J s