Student ID:_____   Name: _____

PHYS2130 Spring 2015: Midterm # 1
IMPORTANT INFORMATION that you may need:

Speed of light in empty space (c) 3.0×10^8 m/s

Planck's constant (h) 6.626×10^{-34} J-sec

Coulomb's constant (k) 8.99×10^9 N-m^2/C^2

Charge of an electron (e) 1.6×10^{-19} C

Mass of an electron (m_e) 9.11×10^{-31} kg

Mass of a proton (m_p) 1.67×10^{-27} kg

Ground state energy of electron in Hydrogen   -13.6 eV

$hc = 1240$ eV-nm

$ke^2 = 1.440$ eV-nm

1 electron-Volt (eV) = 1.602×10^{-19} Joules   1 MeV = 1×10^6 eV

     1 pm = 1×10^{-12} 1 nm = 1×10^{-9} m   1 µm = 1×10^{-6} m   1 mm = 1×10^{-3} m

Representative wavelengths:

Red (680 nm); Orange (610 nm); Yellow (580 nm); Green (540 nm); Blue (470 nm); Violet (410 nm)

Work functions of common metals: Sodium=2.28eV; Calcium=2.9eV; Cadmium=4.07eV;
                    Aluminum=4.08eV; Lead= 4.14eV; Silver= 4.73eV; Carbon=
                    4.81eV; Nickel= 5.01eV

   To ensure that you properly understand the question, we strongly recommend that you make a sketch
   of the situation described by the problem before giving an answer.

SAMPLE COVER

Remember to write your name on your answer sheet. Write the color on your M/C answer sheet.
 Return both the answer sheet and the exam.

'On my honor as a University
of Colorado at Boulder student
I have neither given nor received
unauthorized assistance on this
work.'

Name_____

Signature _____