Autumn Final Examination 2020
Subject: Phy 124: Physics II
Program: B.Sc. (Engg.) in CSE
Batch 50, 51, 52

Marks: 5 x 4 = 20   ::   Time 120 min

1. **Draw** the graph of Frequency versus stopping potential (V_s), where V_s = 2, 4, 6, and 8 volts and the corresponding frequency f = 2, 4, 6, and 8 x 10^{14} Hz. Use your drawing to tell the stopping potential for the frequency 10 x 10^{14} Hz?

2. What is dispersion? Show that dispersion is inversely proportional to the slit width.

3. What is the wave function? Explain the relationship between wavefunction and probability.

4. Find the velocity of an electron to have kinetic energy equal to the photon energy of a certain material at wavelength 435 nm. What is the color of the light?

5. Compare the de Broglie wavelengths of (a) a 1.25 KeV Photon, (b) a 1.25 KeV proton. (m_p = 1.67 x 10^{-27} Kg).