**Darbhanga College of Engineering, Darbhanga**

**Mid-semester Examination (CSE & EEE)**

**Subject – Engineering Physics (2nd Sem)**

**Attempt any 4 questions. Each question carries 5 marks.**

1) What is Dielectric? What is the difference between polar and non-polar Dielectric material with examples?

OR

a) Write down Gauss law for dielectric material.

b) What is Poynting theorem?

2) Write down the Maxwell’s equation in differential and integral form and discuss their physical interpretations.

OR

Prove that , where the terms have their usual meanings.

3) Explain the concept of temporal and spatial coherence.

OR

Discuss how coherence length of a source is measured with Michelson’s interferometer.

4) How do you measure the spatial coherence using Young’s interferometer? Describe it.

OR

a) What do mean by coherence length and write an expression for it.

b) Find an expression for line width.

5) a) Calculate the de Broglie wavelength associated with an electron of energy 1.5eV.

b) Explain black body radiation curves and Planck’s quantum hypothesis.

6) Explain in brief Compton effect on the basis of quantum hypothesis. What is its physical

significance?

OR

What is the maximum possible Compton shift by electrons? In which direction does it occur?