B. Sc. 6ᵗʰ Semester (Honours) Practical Examination, 2020-21

PHYSICS

Course ID: 62421   **Code: SHPHS/601/C-13**

Course Title: Electromagnetic Theory Lab (P13)

Time: 1:00 Hour   **Full Marks: 15**

The figures in the margin indicate full marks.

Answer *any three* of the following questions: 5 × 3= 15

1. State Malus' law.
   What is plane of polarization?
   In verifying Malus law what are the roles of polarizer and analyzer?

                                                                    2+1+2

2. What is optical activity?
   Write down the working formula for determining specific rotation of sugar solution.
   Draw a clean schematic diagram for experimental determination of specific rotation of the
   solution using polarimeter. Point out each part of the setup.

                                                                    1+2+2

3. State Stefan's law of radiation.
   What is the unit of Stefan's constant?
   If the temperature (T Kelvin) vs power data is given for the radiating body how do you
   determine Stefan's constant and the exponent of 'T' in Stefan's formula?

                                                                    2+1+2

4. What is Brewster's law?
    Very briefly state the working principle for determining Brewster's angle for air-glass interface.

                                                                     2+3

5. State Snell's law.
   What is Wollaston's air film?
   What is total internal reflection? Explain with a clean diagram.

                                                                    2+1+2