

**B. Sc. 6<sup>th</sup> Semester (Honours) Practical Examination, 2020****PHYSICS**  
**(Electromagnetic Theory Lab)**  
**Paper: 601/C-13/P-13**  
**Course ID: 62421****Time: 1 Hour****Full marks: 10***The figures in the margin indicate full marks.**Candidates are required to give their answer in their own words as far as practicable.***1. Answer any five (05) of the following questions.****2×5 =10**

- a) Distinguish between polarized and unpolarized light.
  - b) What do you mean by tint of passage? Why is this produced in case of polarization experiment?
  - c) State the law of Malus.
  - d) Draw the typical variation of intensity of light output as a function of the angle between analyzer and polarizer in case of a Malus law experimental set up.
  - e) What do you mean by microwave? What is its use?
  - f) Draw the schematic diagram of different parts of a typical polarimeter.
  - g) Derive Newton's laws of cooling from Stefan's law.
  - h) What is Nicol prism? Draw a cross-sectional diagram of a Nicol prism.
  - i) What is the harm if there be some air bubbles in the polarimeter tube?
  - j) Explain with diagram how unpolarized light can be polarized by reflection.
  - k) What is ultrasonic wave? What are the applications of ultrasonic waves?
  - l) Write down the theory of experimental determination of velocity of ultrasonic wave employing ultrasonic grating and spectrometer.
  - m) What is a Gaussian eyepiece?
  - n) Describe a possible arrangement with proper diagram by which a linearly polarized light can be converted to a circularly polarized light.
  - o) What is a dipole antenna?
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