The open University of Sri Lanka
Department of Physics
Foundation In Science Level – I -2010/2011
Assignment No. 01 –PSF 1302/PSE 1302

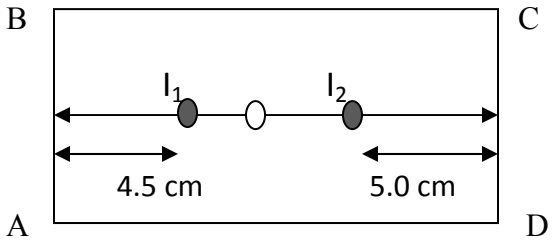
Please write the assignment No., course code, your Registration No. , Name and Address at top right hand corner of your answer script.

Answer script should be send to,
Co-ordinator – PSF 1302/PSE 1302
Department of Physics
The Open University
Nawala, Nugegoda.

Answer all questions **Due date: 01- 09-2010**

(1) State the law of reflection of light
A candle of height 2 cm is placed at a distance of 30 cm from the pole of a concave mirror of focal length 20 cm. Find the position, size and nature of image

(2) There is a small air bubble inside a glass slab of 15 cm. The air bubble appears to be at a distance of 4.5 cm from the front surface AB and 5 cm from the opposite surface CD. Find the refractive index of the glass.



(3) An object is kept 60 cm in front of a thin lens, the image being 300 cm on the other side of the lens. Calculate the displacement of the image when object is moved 20 cm

(i) Near to the lens
(ii) Away from the lens

(4) The density of aluminium is 2.7×10^3 Kg/m^3 and its young's modulus is 7.0×10^{10} N/m^2 . Calculate the velocity of the sound wave in the bar.

(5) A car moving with a speed of 30 ms^{-1} is approaching a factory whistle having the frequency 700 Hz. Calculate the apparent pitch of the whistle as heard by the driver of the car ?

(6) Two open organ pipes of length 60 cm and 60.5 cm produced 2 beats per sound. Calculate the velocity of sound in air?