Assignment # 2

Course Name: Applied Physics

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Class: BS SE-1, CS-1 **BS(SE-1)**

Note: Attempt all Questions

Q1:

a. What is the difference between Reflection and Refraction?

Ans): Reflection: The phenomena in which light beam rebound after hitting a surface is called reflection in reflection light return to its same medium.

Refraction: Bouncing back of light from its normal path is called refraction in refraction light travels from one medium to another medium.

b. What is meant of Critical angle?

Ans): Critical angle is defined as the angle of incidence that provides a 90degree angle of refraction.

c. What is the main function of angle of incidence?

Ans): When waves hit a boundary and are reflected, the angle of incidence equals the angle of reflection. The angle of incidence is the angle between the direction of motion of the wave and a line drawn perpendicular to the reflecting boundary.

d. What is meant by Index of refraction?

Ans): Refractive index, also called index of refraction, measure of the bending of a ray of light when passing from one medium into another. ... Refractive index is also equal to the velocity of light c of a given wavelength in empty space divided by its velocity v in a substance, or **n =c/v.**

Q2:

a. Explain the difference between Solenoid and toroids?

Ans): A solenoid consists of an insulating long wire closely wound in the form of helix. Its length is very large as compared to its diameter.

A toroid is a hollow circular ring on which a large number of insulated turns of a metallic wire are closely wound.

b. Explain the Magnetic field of solenoids?

Ans): A solenoid is a tightly wound helical coil of wire whose diameter is small compared to its length. The magnetic field generated in the centre, or core, of a current carrying solenoid is essentially uniform, and is directed along the axis of the solenoid.

c. Explain the Magnetic field of Toroids?

Ans): The magnetic field in the open space inside (point P) and exterior to the toroid (point Q) is zero. The field B inside the toroid is constant in magnitude for the ideal toroid of closely wound turns. The direction of the magnetic field inside is clockwise as per the right-hand thumb rule for circular loops.