

[illegible]

Total No. of Questions : 07

Max. Marks : 60

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SECTION B

2. What do you understand by length contraction? On the basis of Lorentz transformation derive an expression for length contraction.
3. Derive the formula for relativistic variation of mass with velocity.
4. Calculate the impedance of a conducting medium to electromagnetic waves. Name the constants which determine the characteristic impedance of a medium. What is the phase difference between electric and magnetic field vectors?
5. Using Biot and Savart's law find the magnetic field due to an infinite straight wire carrying current.
6. Explain the phenomena of Hall Effect. How does the Hall Effect decide that current in a metallic conductor is due to negatively charged particles? Derive the value of Hall voltage and Hall coefficient.
7. What is mutual induction? Define coefficient of mutual induction between two coils. Give the units in which it is measured.

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