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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech.(EE)/(Electrical & Electronics Engg.) (2012 Onwards) /
(Electronics & Electrical Engg.) (2012 to 2017)
(Sem.-4)

ELECTROMAGNETIC FIELDS

Subject Code : BTEE-403

M.Code : 57106

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A**Write briefly :**

- 1) Explain the difference between the divergence and curl of a vector field.
- 2) State Helmholtz Theorem.
- 3) Define Equipotential Surfaces.
- 4) What is electric field intensity?
- 5) What is Lorentz force equation?
- 6) Define Magnetic Vector Potential.
- 7) Explain the significance of equation of continuity.
- 8) What is static field?
- 9) What is skin effect?
- 10) What is surface impedance?

SECTION-B

- 11) State and prove the Green's Theorem.
- 12) Discuss Analogies between electric and magnetic fields.
- 13) Discuss energy stored in magnetic fields.
- 14) In free space, electric field density, $D = 10\sin(\omega t + \beta z)a_x$. find magnetic flux density B, E and H.
- 15) State and discuss boundary conditions.

SECTION-C

- 16) What is meant by uniform plane wave? Derive wave equation in terms of electric field and magnetic field.
- 17) Discuss and explain reflection of waves by a perfect dielectric (Normal incidence).
- 18) State and Derive Poynting Theorem.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.