Reg. No. : | | | | | | | | | | |

Question Paper Code: 33033

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Third Semester

Electrical and Electronics Engineering

01UEE303 - FIELD THEORY

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. State Stokes' theorem.
2. Define divergence theorem.
3. Define Coulomb's law.
4. What is polarization?
5. State Ampere's Circuital law.
6. Define self inductance.
7. What is the significance of displacement current?
8. Write down Maxwell's equation in integral form.
9. Define Poynting vector.
10. Define skin depth.

PART - B (5 x 16 = 80 Marks)

11. (a) Explain Cylindrical coordinate system and differential elements in Cylindrical coordinate system. (16)

Or

(b) State and explain (i) Divergence Theorem (ii) Stoke's theorem. (16)

12. (a) Derive the expression for electric field intensity due to charged circular ring. (16)

Or

(b) Obtain the boundary conditions between a conductor and free space of electric field. (16)

13. (a) Using Bio-Savart law find H due to finite and infinitely long straight conductor. (16)

Or

(b) Derive the boundary conditions to explain the behaviour of magnetic field at the interface of two magnetic media. (16)

14. (a) Obtain the expressions for the Maxwell's equation in the point form and integral form. (16)

Or

(b) What are the different ways of emf generation? Explain with the governing equations and suitable practical examples. (16)

15. (a) State the Poynting vector and establish its usage in Electromagnetic wave analysis. (16)

Or

(b) Derive the transmission and reflection coefficient for the electromagnetic waves when incident normally on perfect dielectric. (16)

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