

Roll No.

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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (Electrical & Electronics Engg. / Electronics & Electrical ENgg.)
(2020 Batch) (Sem.-3)

ELECTROMAGNETIC FIELDS

Subject Code : BTEEE-304-2020

M.Code : 76466

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. What is Divergence?
2. How is subtraction done in vector algebra?
3. Name three orthogonal coordinate system.
4. Can we convert vector from one coordinate system to another? Explain with example.
5. What is Electric Field Intensity?
6. What is Current Density?
7. How can you find force between differential current elements?
8. What is Plane Wave?
9. What is Intrinsic Impedence?
10. What is Attenuation?

SECTION-B

11. What is the Vector Algebra? Also explain what is vector? Explain scalar and vector multiplication function with suitable example.
12. What is Columb's law? Explain in detail. What is electric field due to point charges? Discuss.
13. What are Magnetic Forces? What are magnetic boundary conditions? How are they relevant to magnetic circuits? Elaborate.
14. What is Poynting's Theorem? What is the significance of Poynting's theorem? Also explain poynting's vector.
15. Explain the relation between E&H? Give the wave equation for conducting media.

SECTION-C

16. What are maxwell's equations in phasor form? What is the significance of maxwell's equations in wave theory? Elaborate and support your answer with derivations.
17. Explain the following :
 - a) Ampere's circuital law
 - b) Faraday's law
 - c) Biot-Savart's law
 - d) Ampere's law of force
18. What is Gauss law and what are its applications? Discuss what is the role of capacitance? Explain the capacitance effect in two wire line? Also derive the Poisson's equation

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.