

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Electrical Engg.) (Sem.-6)

ELECTROMAGNETIC WAVES

Subject Code : BTEE-603A-18

M.Code : 79314

Date of Examination : 01-07-22

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

1. Write briefly :

- a. State Gauss law for electric fields.
- b. Write the relation between relative permeability and susceptibility.
- c. What is lossy dielectric medium?
- d. What is intrinsic impedance?
- e. What is impedance matching?
- f. Define surface charge density.
- g. Define low loss transmission line.
- h. What is wave polarization?
- i. Define TEM mode.
- j. Define cut-off frequency.

SECTION-B

2. With necessary explanation, derive the Maxwell's equation in differential and integral forms.
3. Derive the expression for the attenuation constant, phase constant and intrinsic impedance for a uniform plane wave in a good conductor.
4. Discuss in brief about the reflection coefficient of a transmission line.
5. State and prove Poynting theorem.
6. Derive the relation between E and H in uniform plane wave propagation.

SECTION-C

7. Discuss the configuration of the Smith chart considering the two families of constant circles.
8. What are the advantages and disadvantages of stub matching?
9. Show that a transmission line will be distortion free if $CR = LG$.

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.