

Roll No.

3216

**B. Tech. (ECE) 5th Semester
Examination – February, 2022**

ELECTROMAGNETIC WAVES

Paper : PCC-ECE-301-G

Time : Three hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt five questions in all, selecting one question from each Unit. Question no. 1 is compulsory. All questions carry equal marks.

1. (a) Define characteristics impedance. $2.5 \times 6 = 15$
(b) Qualities of a good Transmission Lines, explain.
(c) Define VSWR
(d) What do you understand by Modal propagation
(e) Define Group Velocity
(f) How Antenna Radials, explain

UNIT - I

2. Derive equations of Voltage and Current on Transmission Lines. 15
3. Explain Impedance Transformation on lossless and low loss Transmission Line. 15

UNIT - II

4. Explain the basic laws of Electromagnetics. 15
5. (a) Explain boundary conditions at Media interface. 8
(b) Explain total Internal Reflection 7

UNIT - III

6. What are Waveguides. Compare 2 wire Transmission Lines with waveguides. 15
7. (a) Explain modal propagation in waveguides. 8
(b) Explain attenuation in waveguides. 7

UNIT - IV

8. (a) Explain radiations from Hertz Dipole. 8
(b) Explain various radiation parameters of Antenna. 7
9. Write a short notes on :
(a) Power Radiated by Hertz Dipole 8
(b) Dipole Antenna 7