

ANURAG Engineering College

(An Autonomous Institution)

**II B.Tech II Semester Regular Examinations, June/July – 2024
ELECTROMAGNETIC FIELDS AND TRANSMISSION LINES
(ELECTRONICS & COMMUNICATION ENGINEERING)****Time: 3 Hours****Max. Marks: 60**

Section – A (Short Answer type questions)		(10 Marks)		
Answer All Questions		Course Outcome	B.T Level	Marks
1.	Give the expressions for continuity equation and relaxation time	CO1	L2	1M
2.	What is Dielectric Constant	CO1	L1	1M
3.	What is the energy stored in an inductor?	CO2	L1	1M
4.	What is Ampere's force Law	CO2	L1	1M
5.	Define Faraday's Law	CO3	L1	1M
6.	What is the 2 nd Maxwell Equation	CO3	L1	1M
7.	Write the wave equation for E and H in the uniform medium?	CO4	L2	1M
8.	Define Critical angle	CO4	L1	1M
9.	What is Propagation Constant?	CO5	L1	1M
10.	What is the condition for distortion transmission line	CO5	L1	1M

Section B (Essay Questions)

Answer all questions, each question carries equal marks.		(5 X 10M = 50M)		
11. A)	Derive Convection and Conduction Current with necessary equations.	CO1	L2	10M
OR				
B)	Obtain the Poisson's and Laplace equations in electro static fields.	CO1	L2	10M
12. A)	State Amphere's Circuit Law. Find H at (-3, 4, 0) due to a current element along x-axis.	CO2	L3	10M
OR				
B)	State and explain the Biot-Savart's Law.	CO2	L3	10M
13. A)	Summarize the Maxwell's equations for Static Electro-Magnetic fields with remarks.	CO3	L2	10M
OR				
B)	Derive the boundary conditions between conductor and dielectric?	CO3	L3	10M
14. A)	Obtain wave equations for good conductors?	CO4	L2	10M
OR				
B)	Derive the expression for reflection of a wave when incident on dielectric with oblique incidence with perpendicular polarization?	CO4	L2	10M
15. A)	Derive the characteristic impedance Z_0 from the initial equation of transmission line?	CO5	L3	10M
OR				
B)	What is a Smith chart? Explain its significance.	CO5	L2	10M