SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech II Year II Semester Supplementary Examinations May/June-2024
ELECTROMAGNETIC THEORY AND TRANSMISSION LINES
(Electronics and Communication Engineering)

Time: 3 Hours   **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	Explain the following with expression. (i) Coloumb's law. (ii) Electric field intensity. (iii) Gauss law.	CO1	L2	12M
	OR			
2 a	Define Gauss's Law. Explain briefly about Maxwell's 1st equation.	CO1	L1	6M
b	What are the advantages and applications of Gauss law?	CO1	L1	6M

UNIT-II

3 a	A Current Distribution gives rise to the vector potential $A = X^2 Y a_x + Y^2 X a_y + XYZ a_z$ web/m. Calculate B.	CO2	L3	6M
b	Explain about Non-Existence of Magnetic Mono pole.	CO2	L2	6M
	OR			
4	Explain any two applications of Ampere's Circuit law.	CO2	L2	12M

UNIT-III

5 a	Determine the Transformer EMF for the time varying fields.	CO3	L5	8M
b	Define Faraday's law.	CO3	L1	4M
	OR			
6	Explain and determine the EMF for the Followings. (i) Motional EMF. (ii)Transformer EMF.	CO3	L2	12M

UNIT-IV

7	Evaluate the expressions for reflection coefficient and transmission coefficient by a normal incident wave for a dielectric medium.	CO4	L5	12M
	OR			
8	Explain the followings with an expression. (i) Linear polarization (ii) Circular polarization (iii) Elliptical polarization	CO5	L2	12M

UNIT-V

9	A 50Ω lossless transmission line is terminated on a load impedance of $Z_L = (25 + j\,50)$ Ω. Use the smith chart to find. i) Voltage reflection coefficient. ii) VSWR. iii) input impedance of the line, given that the line is 0.3λ long.	CO6	L3	12M
	OR			
10 a	Evaluate the equation for voltage and current at any point in a transmission line.	CO6	L5	7M
b	Discuss about Transmission line Parameters	CO6	L6	5M

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