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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)

**B.Tech II Year II Semester Supplementary Examinations February-2022**

**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 a Define Eclectic Potential. Find the electric potential for a point charge is located at origin. 6M  
b Determine the Relationship between E and V. 6M

OR

- 2 Explain the following with expression. 12M  
i) Coloumb's law. ii) Electric field intensity. iii) Gauss law.

**UNIT-II**

- 3 a Determine Maxwell's Equations for Magnetostatic Field. 6M  
b Determine the Magnetic Flux Density due to Infinite Sheet of Current. 6M

OR

- 4 a Explain about magnetic scalar and vector potential for Magneto-statics 6M  
b An infinitely filamentary wire carries a current of 2A in the +z direction. Calculate B at (-3,4,7). 6M

**UNIT-III**

- 5 a Determine the Expressions for inconsistency of Ampere's law. 6M  
b Why ampere's Law is In-consistent. 6M

OR

- 6 Explain the following 12M  
i) Faraday's law ii) Inconsistency of Ampere's law

**UNIT-IV**

- 7 a Evaluate the expressions for attenuation constant and phase shift constant of lossy dielectric medium. 6M  
b Evaluate the wave characteristics of a uniform plane wave in free space. 6M

OR

- 8 a Determine the expression for intrinsic impedance and propagation constant in a good conductor. 6M  
b Explain and derive the characteristics of wave propagation in free space. 6M

**UNIT-V**

- 9 a Relate SWR and reflection coefficient. 6M  
b Explain the applications of transmission lines. 6M

OR

- 10 a Explain about the smith chart for finding the SWR and Reflection coefficient. 8M  
b List out the applications of smith chart? 4M

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