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M.Tech. (ECE) (2018 Batch) (Sem.-2)

ANTENNAS AND RADIATING SYSTEMS

Subject Code: MTEC-103-18 M.Code: 76259

Time: 3 Hrs. Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

- 1. Attempt any FIVE questions out of EIGHT question.
- 2. Each question carry TWELVE marks.
- 1. a) Describe the radiation mechanism of a single wire antenna.
 - b) Explain in detail the current distribution on a thin wire antenna.
 - 2. What is an antenna array? What are the reasons using antenna arrays? Explain in detail the behaviour of Broad-side and End-Fire antenna arrays.
 - 3. a) Discuss in detail the ground effects in linear wire antennas.
 - b) Write a brief note on Micro strip antennas.
 - 4. a) Explain Friis transmission equation in detail.
 - b) Derive the expression for the directivity of an n element ordinary end fire linear array.
 - 5. a) Describe the significance of uniform amplitude and spacing in linear arrays.
 - b) What is the significance of loop antennas? Discuss small circular loop antenna in detail.
 - 6. a) Describe the importance of parabolic reflector antenna in detail.
 - b) Explain feeding mechanisms and method of analysis for for micro strip antennas.

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- 7. a) Why antenna array is required? Also discuss the concept of super directivity.
 - b) Describe in detail the design considerations for linear arrays antennas.
- 8. Write short notes:
 - a) Antenna temperature
 - b) Radiation power density
 - c) Polarization
 - d) Radiation power density

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NOTE: Disclosure of identity by writing mobile number or making passing request on any page of Answer sheet will lead to UMC case against the Student.

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