

R9

Code: 9A04503

B.Tech III Year I Semester (R09) Supplementary Examinations, May 2012

ANTENNAS AND WAVE PROPAGATION

(Electronics and Communication Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

- 1 (a) Explain the role of antenna apertures and beam area.
(b) Discuss retarded potential-Helmholtz theorem.
- 2 (a) Find the directivity of a half-wave dipole.
(b) Compare for fields of small loop and short dipole.
- 3 (a) Derive the null-to null beam width for broad side array.
(b) Discuss the features of binomial arrays.
- 4 (a) Design a rhombic antenna to operate at a frequency of 30 MHz with the angle of elevation $\Delta = 30^\circ$ with respect to ground.
(b) Explain the features of Yagi-uda array.
- 5 (a) List the characteristics of micro-strip antenna.
(b) Explain the functions of paraboloidal reflectors.
- 6 (a) Write short notes on non-metallic dielectric lenses.
(b) Explain the method of gain measurement by 3-antenna method.
- 7 (a) Explain Scattering phenomena.
(b) Explain the effect of earth's curvature.
- 8 (a) Discuss the structure of Ionosphere.
(b) Give the relation between MUF and Skip distance.
