Reg. No. : | | | | | | | | | | | |

C 3254

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2008.

Sixth Semester

(Regulation 2004)

Electronics and Communication Engineering

EC 1352 — ANTENNA AND WAVE PROPAGATION

(Common to B.E. (Part–Time) Fifth Semester Regulation 2005)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are retarded fields?

2. Draw the current distribution of a $\frac{\lambda}{2}$ wave dipole.

3. Explain Half Power beam width.

4. Define Pattern multiplication.

5. What are the applications of rhombic antenna?

6. What are Parasitic elements?

7. State Babinet's principle.

8. Sketch various types of horn antennas.

9. Define MUF.

10. What is super refraction?

PART B — (5 × 16 = 80 marks)

11. (a) Derive the expression for the radiated field from an alternating current element. (16)

Or

(b) Obtain the expression for the radiated field from a half wave dipole. (16)

12. (a) Derive the expression for emf due to small loop antenna and give the applications of Loop antenna. (16)

Or

(b) Two identical isotropic point sources are spaced by 'd' motors apart and fed with currents of equal Magnitude but with a phase difference. Obtain the Maxima, Minima and Half Power directors of radiated field. (16)

13. (a) Explain the construction and principle of operation of rhombic antenna. (16)

Or

(b) With neat sketch, explain the operation of Yagi-Uda antenna. (16)

14. (a) Describe the operation of slot radiator and its complementary structure. (16)

Or

(b) Explain the operation of Reflector antenna with neat sketch. (16)

15. (a) Discuss the structure of Ionosphere and its effects on radio wave propagation. (16)

Or

(b) Write short notes on

(i) Effects of earth's Magnetic field. (6)

(ii) Virtual height. (5)

(iii) Diversity Techniques. (5)