[05 – 3106]

III/IV B.E. DEGREE EXAMINATION.

First Semester

Electronics and Communication Engineering

ANTENNAS AND WAVE PROPAGATION

(Effective from the admitted batch of 2006-2007)

Time : Three hours Maximum : 70 marks

Question ONE is compulsory.

Answer any FOUR from 2 to 8.

(7 × 2 = 14)

1. (a) Define Gain and Beamwidth of an antenna.

(b) Write a note on radiation pattern.

(c) What is a uniform linear array?

(d) What is pattern multiplication concept?

(e) State Babinet's principle.

(f) What is the relationship between effective aperture and directivity?

(g) Define skip distance.

2. (a) Explain about the retarded vector potential. (7)

(b) State and prove reciprocity theorem. (7)

3. (a) Explain the principle of operation of a linear array antenna. (7)

(b) Derive Friis transmission formula. (7)

4. (a) Explain about the Binomial array. (7)

(b) What are linear arrays? Compare Broadside array and end fire array. (7)

5. (a) Explain the working of Rhombic antenna. (7)

(b) Explain the operation of Yagi-Uda antenna. What are its advantages? (7)

6. (a) Write a short notes on : (7)

(i) Slot antennas

(ii) Loop antennas.

(b) Explain the principle of working of corner reflector antenna. (7)

7. (a) Describe about polarization measurement. (7)

(b) Describe the method of measuring the gain and radiation pattern of an antenna. (7)

8. (a) Explain about propagation of electromagnetic waves. (7)

(b) Discuss about the characteristics of F_1 and F_2 layers. (7)

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