

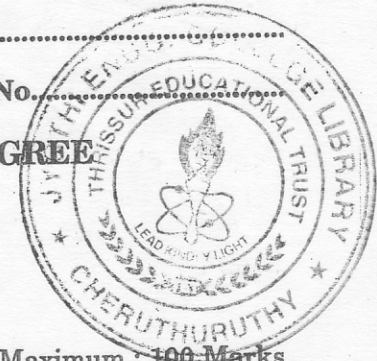
C 6121

Name.....

Reg. No.....

**SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, JUNE 2010**

**EC 04 606—RADIATION AND PROPAGATION
(2004 Admissions)**



Time : Three Hours

Maximum : 100 Marks

Answer all questions.

- I. (a) Define antenna radiation patterns ? What is its significance ?
(b) Define (1) beam efficiency ; and (2) Antenna efficiency.
(c) Explain the features of binomial array.
(d) What is a broadcast array ? Explain its construction with a neat sketch.
(e) Explain the development of folded dipole antenna from a transmission line.
(f) Draw a 2 element YAGI-UDA antenna and explain it.
(g) Explain the limitations of ground wave propagation.
(h) Explain Snell's law of refraction.

(8 × 5 = 40 marks)

- II. (a) Explain the construction of a half wave dipole. Derive the radiation resistance of it.

Or

- (b) (i) Give an account on antenna theorems.

(7 marks)

- (ii) Obtain the directivity of half wave dipole.

(8 marks)

- III. (a) Explain the radiation pattern multiplication principle with a neat sketch.

Or

- (b) Explain the principle of operation of broad-side array with a neat sketch. Derive an expression for its beam width of BSA pattern.

- IV. (a) Explain the construction of folded dipole antenna. Derive an approximate expression for its Z_{in} .

Or

- (b) Draw a 3 element YAGI-UDA antenna. Explain its construction. Derive its gain expression.

- V. (a) Describe the factors involved in the propagation of radiowaves.

Or

- (b) Explain the structure of Ionosphere. Derive the characteristics equations of Ionosphere.

[4 × 15 = 60 marks]