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 directively 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 zin.

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]