(Pages: 2)

Name. Reg. No.

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2005

EC 2K 602. RADIATION AND PROPAGATION

(New Scheme)

Time: Three Hours

Maximum: 100 Marks

- 1. (a) What are the three different antenna field zones? Explain them. Write their boundaries.
 - (h) Define (i) Beam efficiency; (ii) Radiation intensity; and (iii) Self impedance.
 - (m) Explain the features of binomial array.
 - (4) State the advantages of radiation pattern multiplication principle.
 - (e) Explain the construction of V antenna, with a neat sketch.
 - (f) Draw the structure of Cassegrain antenna. State its advantages and limitations.
 - (g) What is plasma frequency? Explain write equation for it.
 - (h) Write the characteristic equations of Ionosphere.

 $(8 \times 5 = 40 \text{ marks})$

- 2. (a) (i) Explain the potential functions for sinusoidal oscillations.
 - (ii) Differentiate halfwave dipole from quarter wave monopole.

Or

- (b) (i) Derive the directivity value of halfwave dipole.
- (ii) State and derive Lorentz reciprocity theorem.
- 3. (a) With neat sketches, explain in detail the radiation pattern multiplication principle.

Or

- (b) Broadly differentiate BSA from EFA. Derive expressions for half power beam widths for both BSA and EFA.
- 4. (a) Differentiate:
 - (i) Traveling wave antenna from standing wave antenna.
 - (ii) V antenna from Rhombic antenna.

Or

(b) Draw a neat sketch of 3 element YAGI-UDA antenna array. Derive an expression for gain of 3 element YAGI-UDA array.

Turn over

EXAMINATION, JUNE 2008

- in (i) Explain the limitations of groups with propagation.
 - (ii) Explain the characteristics of troposty one waves.
 - A) Differentiate sky wave propagation
 - (ii) Define and explain :
 - (1) Critical frequency
 - (2) Virtual height. Whi would be the manufacture of the series of the se

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lime: Three Hours

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(c) What is playing Requency ? Explain write equation for it.

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(i) Prayeling wave antenna from standing wave antenna.

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