

Reg. No. :

--	--	--	--	--	--	--	--	--	--

Question Paper Code: 31463

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Sixth Semester

Electronics and Communication Engineering

01UEC603 - ANTENNA AND WAVE PROPAGATION

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Define half power beam width.
2. Define beam solid angle.
3. What is need of antenna array?
4. What is a short dipole?
5. Define duality principle.
6. Point out the merits and demerits of lens antenna.
7. What are the drawbacks of antenna measurements?
8. List the applications of log periodic dipole array.
9. Define skip distance.
10. What are the factors affect the propagation of radio waves?

PART - B (5 x 16 = 80 Marks)

11. (a) What are Hertzian dipoles? Derive the electric and magnetic field of Hertzian dipoles. (16)

Or

- (b) (i) Explain in detail retarded vector potential and scalar potential. (8)

(ii) Discuss in detail on the following

(1) Antenna temperature (2) Polarization (8)

12. (a) Draw radiation pattern for a half Wavelength dipole and explain in detail. (16)

Or

(b) Discuss in detail about linear array and pattern multiplication. (16)

13. (a) With a neat sketch and explain the slot antenna and its radiation mechanism. (16)

Or

(b) Design and neat sketch of horn antenna and reflector antenna. (16)

14. (a) Describe the construction and basic principle of operation of a helical antenna under
(i) normal mode of operation and (ii) Axial mode of operation. Write its application. (16)

Or

(b) With a neat sketch and explain the construction and operation of helical antenna. (16)

15. (a) Summarize the structure of the ionosphere and explain the phenomena of wave bending introduced by these layers. (16)

Or

(b) Discuss on the following

(i) Critical frequency (8)

(ii) MUF (8)
