

25/04  
AN



Reg. No. :

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

**Question Paper Code : 42460**

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018

Sixth Semester

Electronics and Communication Engineering

EC2353 – ANTENNAS AND WAVE PROPAGATION

(Regulations 2008)

(Common to PTEC 2353 – Antennas and Wave Propagation for B.E. (Part-Time)  
Fifth Semester – Electronics and Communication Engineering – Regulations 2009)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. What is meant by circular polarization ?
2. What is radiation pattern ?
3. What is back lobe radiation ?
4. What are the types of array ?
5. Define uniqueness theorem.
6. What are the applications of corner reflector ?
7. What is frequency independent antenna ? Give the examples.
8. Why folded dipole is used in yagi uda antenna ?
9. What is gyro frequency ?
10. What is meant by Faraday rotation ?

PART – B

(5×16=80 Marks)

11. a) Define and explain the term radiation resistance, power gain, directivity, effective area and polarization of an antenna. (16)
- (OR)
- b) Derive the electric and magnetic field components of a hertzian dipole. (16)

42460



12. a) i) What are the differences between half wave dipole and monopole? (6)  
ii) Explain pattern multiplication with an example. (10)

(OR)

- b) What are the advantages of antenna array? Derive the array factor for uniform linear array. Explain the significance of array factor.

13. a) Explain the principle of horn antenna with a neat sketch. Draw the various type of horn structure.

(OR)

- b) Write short notes on :

- i) Slot antenna (8)  
ii) Lens antenna. (8)

14. a) With a neat block diagram, explain the measurement of radiation pattern and gain of an antenna. (16)

(OR)

- b) i) Discuss the structure and applications of the yagi uda antenna. (10)  
ii) What are the substrate used for the design of microstrip patch antenna? (6)

15. a) i) Explain the following terms : Skip distance, critical frequency, MUF, Whistlers. (8)

- ii) Draw the structure of ionosphere and explain the mechanism of ionosphere propagation. (8)

(OR)

- b) i) Describe the significant features of tropospheric propagation. (8)  
ii) Explain the effect of magnetic fields on EM wave propagation. (8)