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 hetzian dipole. **(16)**

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)**