Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(Electronics & Electrical) (2011 Onwards) (Sem.–7,8)
B.Tech.(Electrical & Electronics) (2013 & Onwards)

ANTENNA & WAVE PROPAGATION

Subject Code : BTEEE-801
Paper ID : [A3019]

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A

Q1. Answer briefly :

a) What is the significance of gain of an antenna?

b) Define effective aperture of an antenna.

c) What is the significance of radiation resistance of an antenna?

d) Draw the two dimensional top view and side view of omni directional and isotropic radiation pattern.

e) Define directive gain of antenna. Write expression of radiation resistance of a dipole antenna.

f) How do reflections from the ionosphere effect the transmission?

g) What is the difference between isotropic and non-isotropic source?

h) How are radiations created from a short dipole?

i) Antenna measurements are done in far field region. Give reasons.

j) Define slot antenna.

SECTION-B

Q2. Define antenna beam width and directivity and obtain the relation between them.

Q3. Explain the concept of polarization in antennas. What are the conditions for different type of polarizations? Also show that circular polarization is a condition of elliptical polarization.

Q4. Describe the space wave propagation.

Q5. Discuss the rectangular and circular aperture antennas.

Q6. Explain briefly linearly wire antennas.

SECTION-C

Q7. a) Derive the field strength of tropospheric wave.

b) Give an account of effect of earths imperfections and roughness.

Q8. Write a short note on the following :

a) Near and far field.

b) Duct propagation.

Q9. What are different types of arrays? Derive the expression for the directivity of an n-element ordinary end fire linear array.