

TE - EPTC - Sem V - (CGS)

R F M A

01/12/2015
Q.P. Code : 5662

(3 Hours)

[Total Marks : 80

- N.B. : (1) Question No. 1 is compulsory.
(2) Solve any three questions from the remaining.
(3) Assume suitable data wherever necessary and justify the assumption.
(4) Draw suitable diagrams wherever required.

- 1a. Explain hazards of electromagnetic radiation. 5
- b. Find the attenuation of a 4 element 2.5 db ripple low pass Chebyshev filter at $\omega/\omega_c=2.5$ 5
- c. What are isotropic pattern and Omnidirectional pattern. Give one example for each. 5
- d. Explain near and far field radiation related to antenna
- 2a. Discuss design procedure for filter using image parameter method. 10
- 2b. Design a LPF whose input and output ports are matched to 50Ω impedance with cutoff frequency of 3 GHz, equi ripple of 0.5 dB and rejection of atleast 40 dB at approx twice the cutoff frequency. 10
- 3a. Explain significance of retarded magnetic vector potential and retarded electric scalar potential. 10
- 3b. Derive radiation resistance of half wave dipole antenna and a monopole antenna 10
- 4a. Find the radiation pattern for an array of 4 elements fed with same amplitude and same phase. Find its HPBW and BWFN.
- 4b. State and prove Reciprocity theorem as applicable to antennas.
- 5a. Design Dolph- TChebyshev array of 6 elements with spacing 'd' between elements with a major to minor lobe ratio of 26 dB. Calculate the excitation coefficients. 10
- 5b. Explain the structure of Microstrip antenna. Discuss its feed mechanisms and applications. 10
- 6 Write short notes on the following.
- a. Log periodic antenna.
- b. Schottky diode
- c. Broad side and End fire array.
- d. Feeding methods of Parabolic antenna.

Course: T.E. SEM.-V)(REV.-2012)(CBSSG)(E&T.C. ENGG.)(Prog T3125)

QP Code: 5662

Correction:

Q. No. 1 d. 5 marks.

Q.No. 4 a. & b 10 marks each Question.

Q.No. 6 is 20 marks.(each bit 5 Marks)

Query Update time: 1/12/2015 04:27PM

P. Anand

2015
4:45PM