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RADAR

Old Question Papers

Author- JNTU

Code No: 07A7EC15

R07

Set No. 1

IV B.Tech I Semester Examinations, November 2010

RADAR SYSTEMS

Electronics And Telematics

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What is a Radar? How it is used in communications?
(b) Derive the equation for maximum Radar range in terms of radar and target parameters? [8+8]
2. (a) Draw the block diagram of FMCW Radar using side band superhetrodyne receiver and explain the function of each block.
(b) What types of errors are present when cycle counter is used to measure frequency of FMCW Radar. [10+6]
3. (a) Why Beat frequency amplifier is used in CW Radar? Explain its principle of working with frequency response characteristics.
(b) Draw the block diagram of sideband super heterodyne CW Radar receiver and explain each block. [8+8]
4. (a) With the aid of neat sketch, describe the equipment and technique used in the mono pulse method of target tracking.
(b) Discuss about the simultaneous-phase-comparison radar. [8+8]
5. (a) Discuss the properties of a matched filter.
(b) Specify the matched filter by its impulse response. [8+8]
6. Explain in detail about Series arrangements for applying phase relationships in an array:
(a) Fed from one end.
(b) Center-fed. [16]
7. (a) Derive the formula for probability of a false alarm for Radar.
(b) Determine the Radar cross-section of a sphere in the optical region and compare it with in Rayleigh region. [8+8]
8. (a) Explain Equipment instabilities Limitation to MTI Performance.
(b) Draw the block diagram of digital MTI processor and explain that how the effects of blind phases are eliminated. [8+8]
