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SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Course & Branch: M.E – W-AEL

Title of the Paper: Radar Signal Processing

Max. Marks: 80

Sub. Code: 735E01(2008)

Time: 3 Hours

Date: 07/03/2011

Session: AN

PART - A

(6 X 5 = 30)

Answer ALL the Questions

1. What is meant by pulse repetition frequency?
2. Mention some of the applications of radar.
3. Explain the types of tracking radar system.
4. Describe the various parts of signal management occurring in radar system.
5. Explain the concept of signal integration/correlation as applied to radar.
6. Explain the theory of interpolation and decimation.

PART – B

(5 x 10 = 50)

Answer ALL the Questions

7. Derive the simple form of radar equation.
(or)
8. Explain the working principle of radar with neat block diagram.
9. Explain the principle of ambiguity diagram.

(or)

10. Explain the linear frequency modulation for pulse compression.

11. Write short notes on:

(a) convolution/fast convolution

(b) correlation/fast correlation as applied to radar.

(or)

12. Explain the concept of windows and Resolution.

13. Describe the working of Doppler frequency shift.

(or)

14. Explain in detail the working of Moving Target Identification (MTI) radar with neat block diagram.

15. Explain the working of synthetic aperture radar (SAR) signal processor.

(or)

16. Explain the working of microprocessor based moving target detection with a neat sketch.