SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Course & Branch: M.E – Applied Electronics
Title of the paper: Radar Signal Processing
Semester: I Max. Marks: 80
Sub.Code: 635E01 Time: 3 Hours
Date: 08-12-2008 Session: FN

PART – A (6 x 5 = 30)

Answer All the Questions

1. Differentiate search Radar and Tracking Radar.

2. Define Optimum – detector law.

3. What are the methods of recovery of data from the samples?

4. Brief about blind speed.

5. Write short notes on airborne radars.

6. What do you mean by pulse compression?

PART – B (5 x 10 = 50)

Answer All the Questions

7. Derive the radar range equation. Explain the actor that effect the maximum range of a radar.

(or)

8. A Radar transmitter has a maximum average peak power capability and average power capability of 10mwatts and 5kwatts respectively. If prf is 300Hz. What is range resolution.

9. Discuss briefly about Matched filter receiver.

(or)

10. What are detector characteristics? Brief it

11. Write short notes on
    (a) Signal integration
    (b) Correlation
    (c) Convolution

(or)

12. Write short notes on
    (a) FFT
    (b) Fast convolution
    (c) Fast correlation.

13. What do you understand by Doppler effect? Derive an expression for relative velocity of a moving target.

(or)

14. An MTI radar operates at 8Ghz with a prf of 3500pps. Calculate the lowest three blind speeds of this radar.

15. With neat block diagram explain the synthetic Aperture Radar (SAR) processor.

(or)

16. With neat block diagram explain the JDL processor and how Doppler and power are compensated.