**R09**

**Code No: C6110, C6510**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**
**M.TECH I SEMESTER EXAMINATIONS, APRIL/MAY-2012**
**RADAR SIGNAL PROCESSING**
**(COMMON TO COMMUNICATION SYSTESM, WIRELESS & MOBILE COMMUNICATIONS)**

**Time: 3hours** **Max.Marks:60**

**Answer any five questions**
**All questions carry equal marks**
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1.a) Draw the block diagram of Radar and explain each block in detail.
b) List the applications of Radar Systems.
c) Explain the Radar with noise jamming.

2.a) Derive the frequency response Matched filter function using the Schwartz inequality.
b) Write short notes on efficiency of Non-Matched filters.

3.a) Describe the operation of Logarithmic Detector.
b) Explain the Cell Averaging CFAR Receiver.

4.a) Explain the operation of Neyman-pearson detector.
b) Briefly the signal management in radars.

5.a) Draw the Radar ambiguity diagram for periodic pulse train and explain.
b) What are the Optimum Waveforms for Detection in clutter?

6.a) Explain the linear FM pulse compression with neat block diagram?
b) What is stretch technique? Explain.

7.a) Differentiate between the Binary Phase coding and Barker codes for RADAR.
b) Draw the block diagram of phase coded CW radar and explain.

8.a) Describe the Costas codes.
b) How the side lobes are reduced in phase coded Pc signals?

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