

Code No: C6510**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****M.Tech I - Semester Examinations March/April-2011****RADAR SIGNAL PROCESSING****(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 radar block diagram and explain each block in detail. Give the applications of radar systems.
b) Derive the radar range equation. [12]
2. a) Derive the frequency response characteristics of matched filter receiver.
b) Briefly explain correlation detection and cross-correlation receiver. [12]
3. a) Explain the operation of Neyman-pearson detector.
b) What are the losses of CFAR? [12]
4. a) Explain about I/Q detector in detail.
b) Explain the signal management in radars. [12]
5. a) Sketch the ambiguity diagram for periodic pulse train and explain.
b) What are the waveform design requirements? [12]
6. a) What is the significance of pulse compression in radar?
b) Explain stretch technique.
c) Explain SAW pulse compression in detail. [12]
7. a) Explain about Barker codes.
b) Draw and explain the block diagram of phase coded CW radar. [12]
8. a) Explain about Frank codes.
b) How the side lobes are reduced in phase coded PC signals? [12]
