R09

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]

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