LBB 8/5/13

R09

Code No: 09A80405

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year II Semester Examinations, May - 2013
Radar Systems
(Electronics and Communication Engineering)

Time: 3 Hours **Max. Marks: 75**

Answer any Five Questions
All Questions Carry Equal Marks

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1.a) What is Radar range resolution? State the range resolution dependence parameters.
b) Differentiate mono-static and bi-static radar systems.
c) Define RCS. [6+5+4]

2.a) Show that the wavelength of operation has an effect on the radar range.
b) What are the losses in radar system and how do you compensate them?
c) Show how primary radar can be used to measure range and azimuth. [15]

3.a) What are the limitations of CW Radar? How are the limitations overcome in CW-IF radar?
b) What is meant by integration of Pulses? Compare various methods. [7+8]

4.a) What is MTI radar? How does it operate?
b) Define blind speed. An MTI Radar operates at 5 GHz with PRF of 100 PPS. Find the 3 lowest blind speeds of this radar. Explain the importance of staggered PRFs. [8+7]

5.a) Compare MTI radar with pulse Doppler radar.
b) Explain the function of single delay line canceller and derive an expression for the frequency response function. [8+7]

6.a) With a suitable block diagram explain the working of a conical scan tracking radar. Explain the various factors that need to be considered in determining the optimum squint angle.
b) Draw the block diagram of mono-pulse tracking radar and explain the operation. [9+6]

7.a) Write a detailed note on matched filter receiver.
b) Explain about Correlation function and Cross-correlation receiver. [8+7]

8. Write short notes on the following:
i) Phased array radar.
ii) Any two types of radar displays
iii) Multiple Frequency CW radar. [15]

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