NAME_____ ROLLNO_____

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY-2006

IV B.TECH II SEMESTER REGULAR EXAMINATIONS

RADAR ENGINEERING

(ELECTRONICS&COMMUNICATION ENGINEERING)

NOVEMBER 2006

TIME-3HOUR
MARKS-80

ANSWER ANY FIVE QUESTIONS ALL QUESTIONS CARRY EQUAL MARKS.

1. (a) Draw the block diagram of a pulsed radar and explain it's operation.

(b) What are the desirable pulse characteristics and the factors that govern them in a Radar system?

2. By applying Statistical noise theory, derive the Signal to Noise Ratio and hence the expression for probability of detection.

3. (a) Explain the operation of CW tracker illuminator of the missile system.

(b) What are the advantages and disadvantages of FMCW Radar over multiple frequency CW Radar.

4. (a) What is the principle of MTI Radar?

(b) How does a MTI Radar differ from CW Radar.

(c) What is the distinctive feature that makes the MTI Radar and pulse Doppler Radar to differ?

5. (a) Differentiate the operation of pulse radar from simple cw radar.

(b) Draw the output waveforms from mixer for the different range of Dopplerfrequency.

(c) Draw the different sweeps of an MTI radar on A-scope display.

6. (a) Compare the tracking techniques.

(b) Explain in detail about limitations to tracking accuracy.

7. (a) List out the different types of displays used for radar applications, and their characteristics.

(b) Three network units, each of 6 dB noise figure and 10 dB, 6 dB and 3 dB gains respectively are cascaded. Determine the overall noise figure of the system.

8. (a) Establish the impulse response characteristic for a matched filter.

(b) Derive the radar range expression in terms of jammer bandwidth and power.