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**NEELKANTH INSTITUTE OF
TECHNOLOGY**

B.Tech ECE (Semester VIII)

**FIRST SESSIONAL EXAMINATION
(IMPROVEMENT) 2014-2015 INTRODUCTION
TO RADAR SYSTEM (EEC-035)**

Time: 1:00 Hours

Maximum Marks 30

NOTE: - i. be precise in your Answer

ii. All section are compulsory

SECTION A

1. Attempt any Five Question :

2X5=10

- (a) Draw the block diagram of the Pulse Radar.
- (b) Derive an expression for Doppler shift and what happens to Doppler shift when target moving towards the radar?
- (c) Define PFA and PMD?
- (d) Classify the different beam shapes used in Radar antenna.
- (e) Derive an expression for maximum Unambiguous Range & write its significance.

- (f) Draw the block diagram of delay line canceller and write its significance.
- (g) i. Write down the range equation in terms of Noise figure.
ii. Write down the relationship between Duty cycle and Peak average Power.

SECTION B

**2. Attempt any Four Questions:
5X4=20**

- (a) Explain the working principle of MTI Radar with suitable block diagram
- (b) Explain the RADAR cross-section of target & fluctuation and also explain the Swerling Model.
- (c) Write a short note on Threshold detection and Blind speed.
- (d) Derive the radar range equation in terms of receiver noise figure.
- (e) Draw the block diagram of improved CW Radar. Write down the application of RADAR.
- (f) Write down the different types of System losses in Radar.
- (g) Frame your own question (which you fill deserve 5 marks in RADAR, except the given question in this paper) and write the answer.