



ECE

M 25890

Reg. No. :

Name :

VIII Semester B.Tech. Degree (Supplementary – Including Part Time)
Examination, October 2014
(2007 Admn. Onwards)
PT 2K6/2K6 EC 801 : RADAR AND NAVIGATION

Time: 3 Hours

Max. Marks : 100

PART – A

Answer all questions :

- I. a) What are multiple time around echoes ? Explain.
- b) Write the applications of radar.
- c) Briefly explain about doppler filter banks.
- d) What is a tracking radar ? Explain the sequential lobing method.
- e) Explain about A-scope and B-scope radar displays.
- f) Write a note on cross field amplifiers.
- g) What is Navstar Global positioning system ? Explain.
- h) Draw and explain doppler spectrum. (8×5=40)

PART – B

- II. a) i) What are the different antenna parameters ? Explain. 9
 - ii) Write down the different radar frequencies used for transmission. 6
- OR
- b) i) Derive the radar range equation. 10
 - ii) Briefly explain about the propagation effects in radar. 5

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- III. a) i) With a block diagram explain the working of non coherent MTI radar. **9**
 ii) Explain about automatic tracking with surveillance radar. **6**

OR

- b) Write down the principle of monopulse tracking. Also explain the working of a 1-D monopulse tracking radar with a block diagram. **15**

- IV. a) What is a matched filter receiver ? Explain. Derive the formula for the impulse response of the matched filter to make noise minimum. **15**

OR

- b) i) Explain the operation of a 3-cavity Klystron. **8**
 ii) With a block diagram explain a superheterodyne receiver. **7**

- V. a) What are the different methods of navigation ? Explain. **15**

OR

- b) i) What is doppler effect ? Derive the formula for the doppler frequency shift. **8**
 ii) What is the role of satellites in navigation ? Explain. **7**

PART-B

OR