

Code No: **RT41048****R13****Set No. 1****IV B.Tech I Semester Supplementary Examinations, February/March - 2018****RADAR SYSTEMS****(Electronics and Communication Engineering)****Time: 3 hours****Max. Marks: 70***Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B************PART-A (22 Marks)**

1. a) Calculate R_{unamb} of a radar if f_p is 2MHz? [4]
- b) Define operator loss? What is the efficiency factor of operator? [4]
- c) Define STALO & COHO? [3]
- d) Write notes on equipment instabilities? [4]
- e) Discuss about "Efficiency of non-matched filters"? [4]
- f) Define the noise figure equation in 'dB's'? [3]

PART-B (3x16 = 48 Marks)

2. a) Explain the working principle of basic radar system? [8]
- b) Explain about integration of radar pulses? [8]
3. a) Discuss types of system losses in radar system? [8]
- b) Draw the diagram of wanted and unwanted signals in FM altimeter? Explain? [8]
4. a) Explain the butterfly effect on A-scope display? [8]
- b) Explain the function of sequential lobing tracking radar? [8]
5. a) With suitable block diagram, explain the function of one-coordinate amplitude comparison monopulse radar? [8]
- b) Explain the working of lens antenna used in radar system? [8]
6. a) Explain the architecture for phased arrays? [8]
- b) Explain the working principle of correlation detection with a neat diagram? [8]
7. a) Derive the noise figure of N-stage cascade network? [8]
- b) How a circulator works as duplexer? Explain. [8]