

Total No. of Questions :8]

[Total No. of Printed Pages :3

Roll No.....

**EC - 703**

**B.E. VII Semester**

Examination, December 2012

**TV and Radar Engineering**

*Time : Three Hours*

*Maximum Marks : 100*

*Minimum Pass Marks :35*

*Note : Attempt any five questions.*

*Assume suitable data if any missing.*

- 1) a) Explain CW radar principle. How can range ambiguities be overcome in continuous wave radar? (11)
- b) Draw the block diagram of altimeter. (5)
- c) On what parameters Radar Range equation depends? Explain in Detail. (4)
  
- 2) a) What are the different types of indicators used in radar systems? (4)
- b) Draw the block diagram of MTI radar and explain working in detail. (6)
- c) How problem of blind speed can be minimized in MTI radar? (4)
- d) Explain the following terms related to tracking radar:
  - i) Sequential Lobing
  - ii) Conical Scan
  - iii) Monopulse Tracking (6)

EC - 703

PTO

[2]

- 3) a) Explain clearly the range detection of a target using pulsed radar and hence obtain the effect of pulse width and PRI on range detection. (5)
- b) What is the difference between pulse interval and PRF? (3)
- c) What are the factors that governs the selection of the PRF for a particular radar? (4)
- d) What is meant by ambiguous reception? (3)
- e) Why SSB is not used for picture signal transmission in Television? (5)
- 4) a) Deduce the relation between the video signal B.W., scan line and scan rate used in television system. (9)
- b) Draw a circuit diagram and explain the operation of the horizontal output stage of a TV receiver. (6)
- c) Draw the circuit of a sync separator employing a PNP transistor. (5)
- 5) a) What do you understand by compatibility in TV receivers? Explain. (4)
- b) Explain the principle of operation of Baluns used in the TV receiver. (6)
- c) Explain the terms hue and saturation used in colour television. (5)
- d) What are the various carriers and subcarriers used in colour TV transmission? Indicate their relative position. (5)

[3]

- 6) a) Sketch the sectional view of a picture tube that employs electrostatic focusing and electromagnetic deflection and level all the electrodes. (6)
- b) What is the function of aquadag coating on the inner side of picture tube. (3)
- c) Draw the layout of a typical television studio and explain how the picture and sound signals are processed in the control room. (4)
- d) Draw the block diagram of a closed circuit television system. (7)
- 7) Write short notes on : (20)
- i) LCD displays
  - ii) High definition television system
  - iii) Digital TV receiver
- 8) Write short notes on : (20)
- i) Bistatic Radar
  - ii) PAL system
  - iii) Cable televisions system

\*\*\*\*\*