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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 over come 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)

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- 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)

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- 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
