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Name.....

Reg. No.....



**SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, DECEMBER 2005**

EC AI /IC 2K 705 (E)—TV ENGINEERING RADAR SYSTEMS

Time : Three Hours

Maximum : 100 Marks

- I. (a) What is meant by synchronization ? Explain its need.
(b) Define VSB. Distinguish VSB from other modulation schemes.
(c) Explain the principle of colour signal transmission.
(d) Define and explain luminance, hue and saturation.
(e) Give an account on 'Cable frequencies'.
(f) Explain the functioning of a cable decoder.
(g) Explain the limitations of CW Radar.
(h) Explain the applications of Microwave circulators and Magic tees in tracking Radars.
(8 × 5 = 40 marks)
- II. (a) (i) Briefly explain the principle of Television. (7 marks)
(ii) Define and explain :
1 Interlaced scanning. 2 Blanking.
3 Channel bandwidth. (8 marks)
- Or
- (b) (i) Draw a neat block diagram of TV Receiver and explain its principle of operation. (7 marks)
(ii) Give an account on 'CCD camera'. (8 marks)
- III. (a) Draw neat sketches of any two TV picture tubes. Explain in detail their structures and principle of operation in detail. (15 marks)
- Or
- (b) (i) Explain in detail the Formation of chrominance signal. (7 marks)
(ii) Describe the principles of NTSC and PAL systems. (8 marks)
- IV. (a) (i) Enumerate and explain the requirements of an Ideal co-axial cable for CATV. (7 marks)
(ii) Explain the functioning of cable distribution system. (8 marks)

Or

Turn over

(b) Write short notes on :

- 1 General concept of video bit reduction.
- 2 Scrambling methods.

(7 marks)

(8 marks)

V. (a) (i) Draw neat block diagrams for Radar transmitter and Radar Receiver. Explain their principle of operation.

(7 marks)

(ii) Derive simple form of Radar Range Equation.

(8 marks)

Or

(b) Write technical notes on :

- 1 Radar Altimeter.
- 2 MTI Radar *vs.* pulse doppler Radar.

(7 marks)

(8 marks)

[4 × 15 = 60 marks]