

B.Tech. VIII - Semester (Main & Back) Examination, April-2019
 Electronics & Communication Engineering
 8EC2A Radar & TV Engineering

Time : 3 Hours

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 Maximum Marks : 80
 Min. Passing Marks : 26
Instructions to Candidates:

Attempt any Five questions, selecting One question from each unit. All Questions carry equal marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)

Unit - I

1. a) What is the necessity of delay line canceller? Describe various types of delay lines using an MTI radar. (2×4=8)
 b) What is blind speed? Calculate the minimum blind speed for a Radar, Which is operating at a frequency 20GHz and sends 1000 pulses per second (8)

(OR)

1. a) Explain the (2×6=12)
 i) Aircraft landing and
 ii) Aircraft tracking systems
 b) Explain the working of different marker beacons used in radar navigational aids. (4)

Unit - II

2. a) Explain the working of CCD camera tubes and compare their performance with other camera tubes (8)
 b) Calculate the peak value of resultant signal when saturated yellow colour is added to the luminance Y signal. (4)
 c) Determine the resultant peak signal when luminance signal is white and the resultant colour difference signals are added to it. (4)

(OR)

2. a) What do you understand by interlaced scanning? Show that interlace scanning reduces the flicker. (8)
 b) Sketch composite video signal waveform for atleast three successive line and indicate: (8)

- i) Extreme white level
 ii) Blanking level
 iii) Pedestal height
 iv) Front porch and back porch

Unit - III

3. a) Explain the phenomenon of interleaving of colour signals. How does it help in ensuring compatibility? (8)
- b) Write a note on weighting factors. Give the weighting factors for U and V (8)
- (OR)
3. a) Justify the use of vestigial side band transmission for TV system. Draw the frequency band for channel III and IV in third band and show their respective sound carrier and colour sub carrier frequencies (4+4=8)
- b) Explain the compatibility issues related to colour and monochrome TV system. (8)

Unit - IV

4. a) Explain the need of attenuating IF video signal within ± 0.75 MHz of the video IF carrier. Draw the shape of the frequency response curve before detection and after detection. (8)
- b) Explain the need and working of AFC circuits. (8)
- (OR)
4. a) Draw the circuit diagram for (4×2=8)
- i) Horizontal and vertical sync. separator
- ii) RF tuner
- iii) EHT generator
- iv) AGC
- b) Explain the use of (4×2=8)
- i) Delayed AGC
- ii) Simple diode detector
- iii) Pilot carrier scheme for colour sub carrier signals
- iv) Quadrature modulation in chrominance signal.

Unit - V

5. Write the short notes on any Two: (16)
- i) Modern TV receiver with LCD, LED and plasma displays
- ii) DISH TV
- iii) IPTV

(OR)

5. a) Explain transmission and reception process of digital TV system (8)
- b) Write the name of common faults and their diagnosis in TV receiver. (8)