

Code No: M0423/R07

Set No. 1

IV B.Tech I Semester Supplementary Examinations, Feb/Mar 2011
TELEVISION ENGINEERING
(Electronics & Communication Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) How do you come to conclusion that the color sub carrier is 4.53 MHz.
(b) Explain the reasons for selecting existing standards for color transmission. [8+8]
2. (a) Write about positive and negative modulation in detail.
(b) Discuss the merits and demerits of negative modulation. [10+6]
3. Discuss briefly about the following.
(a) Camera control unit.
(b) Special effects generation.
(c) View finder. [5+5+6]
4. Write in detail NTSC color system and also give limitations of NTSC system. [16]
5. (a) Draw the block diagram of an AFT circuit and explain the functions of each block.
(b) Explain how sound trap circuit is used to separate the sound signal from video signal. [8+8]
6. (a) With a neat sketch, explain the operation of synchronous video detector circuit.
(b) Draw a block diagram of digital FM detector and explain the functions each block. [8+8]
7. (a) With a neat sketch, explain the operation of Burst phase IDENT amplifier and colour killer generation circuit.
(b) Write short notes on PAL bistable switch. [10+6]
8. Draw the circuit diagram of Single-Ended AFC. Illustrate the operation of the circuit with necessary waveforms, and explain operation of circuit in detail. [16]

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Set No. 2

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Answer any FIVE Questions
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1. (a) Explain how to generate a color signal.
(b) Sketch the video signal for color signals and explain it. [10+6]
2. (a) Draw the block diagram of CIN diplexer and explain the function of each block.
(b) Explain how trunastile antenna is used for TV transmission. [16]
3. Write about the following:
(a) Image storage capability.
(b) Need for dichrome mirrors in camera optics. [8+8]
4. Draw the figure of monochrome picture tube and explain its working. [16]
5. With a neat block diagram explain the functioning of a typical TV monochrome receiver, in detail. [16]
6. (a) With a neat circuit diagram explain how noise cancellation is done by a separate noise gate amplifier.
(b) Draw the block diagram of Phase Locked Loop FM detector and explain the functions of each block. [8+8]
7. (a) Explain with a suitable circuit diagram how saturation control affects change in the magnitude of chroma signal.
(b) Write short notes on reference oscillator. [10+6]
8. Explain how integrating and differentiating circuits are employed to separate vertical and horizontal sync pulses. Draw the typical circuit and explain its operation. Indicate how a noise gate can be added to it. [16]

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Set No. 3

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Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Write short notes on the following.
 - (a) Brightness
 - (b) Contrast
 - (c) Viewing distance
 - (d) Luminance [4×4=16]
2. (a) Draw the block diagram of CIN diplexer and explain the function of each block.
 (b) Explain how trunastile antenna is used for TV transmission. [16]
3. Write about the following
 - (a) Light transfer characteristics.
 - (b) Sensitivity.
 - (c) Spectral response of monochrome TV.
 - (d) Resolving power. [4×4=16]
4. Draw the control circuit of picture tube and discuss the methods of providing control of various elements in the circuit. [16]
5. (a) Draw the block diagram of the vertical deflection system in monochrome TV receiver and explain the functions each block.
 (b) Write short notes on Automatic Fine Tuning in PAL-D colour receiver. [8+8]
6. (a) Draw the block diagram of UHF tuner and explain the functions of each block.
 (b) With a neat sketch, explain the overall IF response curve of a colour TV receiver. [10+6]
7. Draw the circuit diagram of a crystal controlled reference oscillator and explain how its output is synchronized with the frequency and phase of colour burst. [16]
8. (a) Draw a basic circuit of a sync separator employing a transistor and explain with suitable waveforms how self-biasing enables slicing-off of sync pulses.
 (b) What are the functions of various VLSI chips used in the TV receiver? [10+6]

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Set No. 4

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Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Draw a composite video signal for three horizontal black & white lines and locate important points.
(b) How do you calculate the highest frequency components of 525 line and 60 Hz system? Explain. [10+6]
2. Write about the followings parameters.
 - (a) Transmitter Efficiency.
 - (b) Adjacent channel interference.
 - (c) Co channel interference.
 - (d) Sound signal BW. [4×4=16]
3. Write about the various problems in vidicon camera tube and their remedies. [16]
4. Draw the figure of monochrome picture tube and explain its working. [16]
5. (a) Draw the block diagram of the vertical deflection system in monochrome TV receiver and explain the functions each block.
(b) Write short notes on Automatic Fine Tuning in PAL-D colour receiver. [8+8]
6. (a) With a neat sketch, explain the operation of transistor keyed AGC circuit.
(b) What are the functions of TV tuner? [8+8]
7. (a) Explain with a suitable circuit diagram how saturation control affects change in the magnitude of chroma signal.
(b) Write short notes on reference oscillator. [10+6]
8. Draw the circuit diagram of Single-Ended AFC. Illustrate the operation of the circuit with necessary waveforms, and explain operation of circuit in detail. [16]
