

Code No: R05410406

Set No. 1

IV B.Tech I Semester Regular Examinations, November 2008
TELEVISION ENGINEERING
(Electronics & Communication Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Write short notes on following:
 - (a) Chrominance signal
 - (b) Color bar pattern [8+8]
2. Write short notes on the following.
 - (a) RF output connection.
 - (b) Differential gain.
 - (c) Output impedance. [5+5+6]
3. Explain the following.
 - (a) Spectral response.
 - (b) Resolution.
 - (c) Sensitivity
 - (d) Photo masking. [16]
4. What are the characteristics of 525 line American Black and White TV system? Compare it with 625 line monochrom TV system. [16]
5. (a) Draw a block diagram of PAL-D decoder and explain the functions performed by each block.
(b) Write short notes on the types of RF Tuners. [10+6]
6. (a) Draw a block diagram of a TV tuner and explain the functions of each block.
(b) Write short notes on high pass filter and trap circuits in VHF tuner. [10+6]
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. (a) Draw the circuit diagram of Blocking oscillator and wave shaper for driving vertical deflection amplifier and explain its operation. [16]

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1. Write about the following
 - (a) Extraction of 'G' signal from color difference signals
 - (b) Formation of chrominance signals. [8+8]
2. (a) What is the range of propagation of TV signals? What are the different parameters that affect the range?
 - (b) Discuss briefly the requirement of booster amplifier along with merits and demerits of it. [8+8]
3. What are the different types of camera tubes used for TV and compare them in detail. [16]
4. (a) Write the principles of PAL system.
 - (b) Write the principles of PAL-D receiver. [6+10]
5. (a) Draw a block diagram of AGC system in monochrome television receiver and explain the functions performed by each block.
 - (b) Discuss briefly about sync separation and processing in monochrome television receiver. [8+8]
6. (a) With a neat sketch, explain the operation of remote control infrared transmitter.
 - (b) What are the merits of keyed AGC system? [10+6]
7. Draw the burst phase discriminator circuit and explain its working in color TV Receiver. [16]
8. (a) Write about Digital Terrestrial Television.
 - (b) Write short notes on Noise in sync pulses. [8+8]

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Set No. 3

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1. Write about the following.
 - (a) Hue
 - (b) Saturation
 - (c) Gamma correction
 - (d) Frequency interleaving [4×4=16]
2. With neat block diagram, explain the working of TV transmitter in detail. [16]
3. Discuss persistence-lag characteristics of a vidicon and plumbicon. [16]
4. Write short notes on the following:
 - (a) Gray scale tracking
 - (b) Automatic degaussing. [8+8]
5. (a) What are the functional requirements of RF Tuner?
(b) Draw the block diagram of RF Tuner and explain how incoming signals from different stations are translated to common picture IF and sound IF frequencies. [6+10]
6. Draw the block diagram of a “microcomputer controlled electronic channel selection and tuning system” and explain the functions of each block. [16]
7. (a) With a neat sketch, explain the operation of Burst phase discriminator circuit in detail.
(b) Write short notes on colour saturation control. [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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1. (a) Sketch a composite video signal for a 625 line system picture having alternate three black & white vertical lines and figure out different points.
(b) Calculate the time period of front porch and back porch of a 625 line system with 60Hz frequency. [10+6]
2. Explain the operation of basic TV transmitter with a neat block diagram. [16]
3. Sketch neatly the diagram of image orthicon and discuss relevant characteristics of the camera. [16]
4. Write short notes on the following:
 - (a) Pin cushion distortion.
 - (b) Beam centering. [8+8]
5. With a neat block diagram explain the functioning of a typical TV monochrome receiver, in detail. [16]
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. (a) With a neat sketch, explain the operation of RGB matrixing and drive amplifier circuit.
(b) Write short notes on Burst Pulse Blanking. [10+6]
8. (a) Draw the block diagram of sync separator, AFC network and deflection circuits of a television receiver and explain the functioning of each block.
(b) Write short notes on UHF antennas. [12+4]
