

Code No: **R4204A**

R10

Set No. 1

IV B.Tech II Semester Regular Examinations, April/May - 2014

TV ENGINEERING

(Electronics and Communication Engineering)

Time : 3 hours

Max. Marks: 75

Answer any Five Questions

All Questions carry equal marks

- 1 a) With detailed block diagram explain the working of monochrome television receiver [8]
b) Explain the differences between Horizontal Scanning and Vertical Scanning [7]
- 2 a) Define Total channel bandwidth using vestigial sideband and Draw the vestigial side band characteristics of TV transmitter and receiver. [8]
b) Explain the picture signal transmission. [7]
- 3 a) Draw the constructional detail and explain the operation of Silicon Diode Array Vidicon [8]
b) Explain in detail the CCD Image Sensors [7]
- 4 a) Explain the characteristics and specifications of picture tube [8]
b) Explain the delay line method of separating the U and V signals in a PAL receiver [7]
- 5 a) Describe briefly the alignment procedure and precautions for aligning the RF tuner of the receiver. [8]
b) With circuit diagram describe the IF section of a TV receiver. Explain how the use of a SAW filters simplifies the design of IF amplifiers. [7]
- 6 a) Explain about receiver sound system [8]
b) How the Noise cancellation is achieved ? Explain [7]
- 7 a) What is the function of a colour killer circuit in the path of chrominance signal in the receiver [8]
b) Explain U & V demodulators [7]
- 8 a) Explain the differences between AGC, AFC . [8]
b) With neat block diagram explain the essential elements of a satellite communication system [7]

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Set No. 2

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Time : 3 hours

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Answer any Five Questions

All Questions carry equal marks

- 1 a) With suitable diagrams explain in detail the interlaced scanning procedure [8]
b) What is the procedure involved in generation and Encoding of Colour signals [7]
- 2 a) Explain the differences between positive and negative modulation [8]
b) Explain the sound signal transmission. [7]
- 3 a) Draw the block diagram of a monochrome television receiver and explain each block in detail [8]
b) Draw the block diagram of a colour camera receiver and explain each block in detail [7]
- 4 a) Draw the block diagram of NTSC transmitter and explain the function of each block. [8]
b) Explain the sequence of modulation in the PAL colour system and illustrate the colour burst swing in a PAL system [7]
- 5 a) Describe briefly the alignment procedure and precautions for aligning the FM discriminator circuit of the receiver [8]
b) Discuss the importance of Synchronization in a TV broadcast [7]
- 6 a) Explain the operation of TV Receiver Tuner [8]
b) How the Noise cancellation is achieved ? Explain [7]
- 7 a) Burst phase discriminator [8]
b) Explain the principle of operation of Reference oscillator [7]
- 8 a) What are the differences between AFC and single ended AFC circuits , Explain? [8]
b) Explain the major differences in DIGITAL TV, Digital Satellite TV, Direct to Home Satellite TV. [7]

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Set No. 3

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TV ENGINEERING

(Electronics and Communication Engineering)

Time : 3 hours

Max. Marks: 75

Answer any Five Questions

All Questions carry equal marks

- 1 a) With suitable diagram explain in detail about composite video signal [8]
b) Explain The mixing of colours [7]
- 2 a) Explain in detail about TV broadcast channels [8]
b) Explain the differences between CCI and ACI in detail. [7]
- 3 a) Explain the differences between the camera tubes, Vidicon and Silicon Diode Array Vidicon [8]
b) Draw the constructional detail and explain the operation of Plumbicon camera tube [7]
- 4 a) With neat sketch explain the Monochromatic Picture tube [8]
b) Explain about TV standards [7]
- 5 a) Describe the horizontal deflection stage of a TV receiver. How EHT voltage is generated from this section? [8]
b) illustrate the formation of the chroma signal for a colour bar pattern after the color difference signals have been scaled down [7]
- 6 a) Explain various digital tuning techniques [8]
b) Explain about VHF and UHF tuners [7]
- 7 a) What is the need of AFC ? explain its operation with neat sketch [8]
b) Explain the mixing of colour signals [7]
- 8 a) What are the various types of Receiver Antennas ? [8]
b) Mention four special features of Digital TV which cannot be easily incorporated in analog TV [7]

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Set No. 4

IV B.Tech II Semester Regular Examinations, April/May - 2014

TV ENGINEERING

(Electronics and Communication Engineering)

Time : 3 hours

Max. Marks: 75

Answer any Five Questions

All Questions carry equal marks

- 1 a) .Derive an expression for the bandwidth of a video signal in terms of number of lines and field frequency [8]
b) Explain the encoding procedure of colour difference signals [7]
- 2 a) Explain the differences between sound signal transmission and picture signal transmission [8]
b) Explain the procedure involved in TV signal propagation [7]
- 3 a) Draw the constructional detail and explain the operation of vidicon camera tube [8]
b) With neat sketch explain the principle of operation of colour camera [7]
- 4 a) With neat sketch Explain about Electrostatic focusing and , Beam deflection [8]
b) Explain the 625-line monochrome system [7]
- 5 a) With neat sketch Explain about Video amplifier [8]
b) Explain about raster circuits [7]
- 6 a) What is the need of AGC ,explain the operation with neat sketch [8]
b) Explain about FM Sound detectors [7]
- 7 a) What is the function of the color kiler circuit? Explain with neat diagram [8]
b) With neat sketch explain the decoding process using PAL – D decoder [7]
- 8 a) With neat block diagram explain the essential elements of a satellite communication system [8]
b) With neat block diagram explain the single ended AFC circuit [7]