Code No: **R4204A** **R10** **Set No. 1**

IV B.Tech II Semester Supplementary Examinations, July/Aug - 2015

TELEVISION ENGINEERING

(Electronics and Communication Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1 a) Describe briefly the functions of various controls provided on the front panel of a TV receiver. [8]

b) Why the total number of lines is kept odd in all television systems? Justify the choice of 624 lines for TV transmission. [7]

2 a) What is a ghost image in TV? Differentiate leading and trailing ghost images. [8]

b) Explain the configuration of Yagi antenna with a neat sketch. [7]

3 a) Draw cross-sectional view of an image orthicon camera tube and explain how it develops video signal. [8]

b) Explain the image multiplication and signal multiplication in an image orthicon camera tube. [7]

4 a) What is spark-gap protection? Why it is necessary to provide spark-gap protection between the various electrodes? [8]

b) Describe the principles of American 525 line black and white TV system. [7]

5 a) Draw the block diagram of a sound channel in a TV receiver and explain each block. [8]

b) Explain the functions of chroma decoder in a colour TV receiver. [7]

6 a) Explain with a suitable circuit diagram the basic principle of peak FM detection. [8]

b) What are the main components of a TV remote control system? Describe by a block diagram. [7]

7 a) Explain delay line method of separating U and V signals in PAL receiver. [8]

b) What is the function of a colour killer circuit in the path of chrominance signal in the receiver? [7]

8 a) With the suitable waveforms how the sync pulses keep the oscillator in synchronism with corresponding oscillator at the transmitter. [8]

b) Write short notes on digital terrestrial TV. [7]

Code No: **R4204A** **R10** **Set No. 2**

IV B.Tech II Semester Supplementary Examinations, July/Aug - 2015

TELEVISION ENGINEERING

(Electronics and Communication Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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1 a) Describe the basic principle of colour television transmission and reception. [8]

b) How the flicker is reduced by interlaced scanning? Explain. [7]

2 a) Why FM is preferred for sound signal transmission in TV and explain the generation of FM with a neat diagram. [8]

b) What are the various types of antennas used for receiving TV signals? Explain. [7]

3 a) Explain with the help of suitable sketches, how video signal is developed in a vidicon camera tube? [8]

b) Describe how a vidicon is different from an image-orthicon and what are its special applications? [7]

4 a) What is meant by deflection angle of a picture tube? What is the advantage of providing a large deflection angle yoke? [8]

b) Explain the principle and advantages of 625-line monochrome system. [7]

5 Draw block diagram of a monochrome TV receiver and explain each block. [15]

6 a) Describe with a simple circuit the basic principle of a 'keyed AGC' system. [7]

b) Differentiate VHF and UHF tuners. [8]

7 a) Describe the principle of burst phase discriminator with a neat diagram. [7]

b) Write short notes on colour signal mixing. [8]

8 a) Explain the operation of single-ended AFC circuit. [7]

b) Explain the functions of digital satellite TV. [8]

Code No: **R4204A** **R10** **Set No. 3**

IV B.Tech II Semester Supplementary Examinations, July/Aug - 2015

TELEVISION ENGINEERING

(Electronics and Communication Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1 a) Why are synchronizing pulses transmitted along with the TV picture signal? Explain. [8]

b) Explain the horizontal and vertical blanking. [7]

2 a) With the help of a neat sketch, explain the principle of VSB transmission. [8]

b) What is co-channel and adjacent channel interference? Explain the various techniques employed to eliminate these interferences. [7]

3 a) Explain the principle of working of a silicon diode array vidicon camera with a neat sketch. [8]

b) Differentiate vidicon and silicon diode array vidicon cameras. [7]

4 a) What are the merits of electromagnetic deflection over electrostatic deflection in TV picture tubes? Explain. [8]

b) Describe the features and principles of NTSC colour system. [7]

5 a) Explain briefly the process of separating sync pulses from composite video signal. [8]

b) With a neat diagram, explain the IF subsystem of colour TV receiver. [7]

6 a) Draw schematic block diagram of a phase-locked loop FM detector and explain its operation. [8]

b) Explain with suitable diagram how a remote volume control is carried out on receipt of command signals. [7]

7 a) Draw the circuit diagram of an 180^0 PAL-SWITCH and explain its operation. [8]

b) Write short notes on ACC amplifier. [7]

8 a) Draw the circuit diagram of push-pull sync AFC and explain with the help of waveforms. [8]

b) Explain the principle of digital TV receiver. [7]

Code No: **R4204A** **R10** **Set No. 4**

IV B.Tech II Semester Supplementary Examinations, July/Aug - 2015

TELEVISION ENGINEERING

(Electronics and Communication Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1 a) What is mean by Kell-factor? Explain the effect of Kell-factor on the vertical resolution of a television picture. [8]

b) Sketch and explain the pulse trains that follow after the first and second field of active scanning. [7]

2 a) Define positive and negative amplitude modulation? Explain negative amplitude modulation. [8]

b) What are the different types of antennas used for TV transmission? Explain. [7]

3 a) Explain the light transfer characteristics and applications of a vidicon camera. [8]

b) Write short notes on CCD image sensors. [7]

4 a) Explain briefly, how the electron beam is focused on the tube screen? [8]

b) With a suitable block diagram, explain the encoding process in the PAL colour system. [7]

5 a) Draw the block diagram of a Miller vertical deflection circuit and explain how a highly linear sweep output is developed. [8]

b) Describe the principle of synchronous demodulator of a colour TV receiver. [7]

6 a) Explain the basic principle of AGC and show how it is applied to transistor amplifiers? [8]

b) Draw detailed block schematic of a VHF tuner and explain its operation. [7]

7 a) Explain the principle of a U & V demodulator with a neat diagram. [8]

b) Write short notes on colour killer circuit. [7]

8 a) Draw a basic schematic of AFC circuit and explain how the control voltage is developed. [8]

b) Describe the basic functions of DTH satellite TV. [7]