

17441

11718

3 Hours / 100 Marks

Seat No.

--	--	--	--	--	--	--	--

- Instructions* – (1) All Questions are *Compulsory*.
(2) Answer each next main Question on a new page.
(3) Illustrate your answers with neat sketches wherever necessary.
(4) Figures to the right indicate full marks.
(5) Assume suitable data, if necessary.

Marks

1. a) Attempt any SIX of the following:

12

- (i) Describe persistence of vision?
- (ii) Define resolution? What are different types of resolution.
- (iii) Give values of time period of following pulses with respect to CVS.
 - 1) Blanking pulse
 - 2) Synchronizing pulse
- (iv) State necessity of serrated V sync pulses.
- (v) Draw visible light spectrum.
- (vi) State function of colour burst signal.
- (vii) Define:
 - 1) Luminance
 - 2) Chrominance signal
- (viii) Name the type of modulation used for audio and video signal in T.V. transmission.

P.T.O.

b) Attempt any TWO of the following:

8

- (i) Draw VSB and state its advantages in T.V. transmission.
- (ii) State any four CCIR-B standards for colour signal transmission.
- (iii) Draw neat diagram of vide con camera tube and state its working.

2. Attempt any FOUR of the following:

16

- a) Describe interface scanning with neat diagram.
- b) State various frequency allocations for band I and band III T.V. signal.
- c) Describe working of silicon diode array with neat diagram.
- d) State factors influencing colour sub-carrier frequency.
- e) Describe how differential phase error is eliminated in PAL system.
- f) State two advantages and disadvantages of digital T.V.

3. Attempt any FOUR of the following:

16

- a) Define:
 - (i) Aspect Ratio
 - (ii) Interface error
- b) What is brightness, contrast, luminance and viewing distance in T.V.
- c) Describe negative AM with neat waveforms.
- d) Explain principle of digital T.V. transmission.
- e) Draw and label CCVS.
- f) Draw block diagram of digital T.V. transmission system and its working.

- 4. Attempt any FOUR of the following:** **16**
- a) What is scanning? Describe progressive scanning. State its demerits.
 - b) Describe purpose of equalizing pulses in CVS.
 - c) Describe working of CCD camera with neat diagram.
 - d) Draw phasor diagram for weighted and unweighted primary colours.
 - e) Explain operation of PAL-V switching.
 - f) Draw block diagram of PAL transmitter.
- 5. Attempt any FOUR of the following:** **16**
- a) Explain elimination of $(G - y)$ signal in colour T.V. transmissions.
 - b) State the functions of front porch and back porch of horizontal blanking pulse.
 - c) Draw block diagram of monochrome T.V. Transmitter.
 - d) Define pedestal height. Draw and explain its importance.
 - e) Describe additive mixing of the colours.
 - f) State the function of H and V synchronizing pulses.
- 6. Attempt any FOUR of the following:** **16**
- a) Define:
 - (i) Hue
 - (ii) Saturation with respect to colour T.V. signal
 - b) Describe suppressed colour subcarrier transmission. State its advantages.
 - c) Explain generation of U and V signal with expressions.
 - d) State four features of HDTV transmission.
 - e) Draw neat block diagram of PAL encoder and draw respective waveforms of each block.
 - f) Draw block diagram of HDTV signal transmitter.
-