17441

14115

3 Hours / 100 Marks **Seat No.** | | | | | | | | |

Instructions : (1) All Questions are *compulsory*.

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

Marks

1. (A) Attempt any SIX : **12**

(a) Give types of scanning with neat diagram. **2**

(b) What is persistence of vision ? **2**

(c) List CCIR-B standards. **2**

(d) State which types of modulation is used for video signal and why ? **2**

(e) Which are primary colours and secondary colours used for colour TV system ? **2**

(f) What is compatibility with respect to Television ? **2**

(g) Which colour difference signals are transmitted and which are eliminated ? **2**

(h) State two disadvantages of digital TV transmission. **2**

(B) Attempt any TWO : **8**

(a) What is VSB transmission and draw VSB representation diagrammatically ? **4**

(b) What is the purpose of colour burst signal ? Draw colour composite video signal. **4**

(c) Draw neat diagram of CCD camera and state its working. **4**

2. Attempt any FOUR : **16**

(a) Draw block diagram of monochrome TV transmitter and give its working. **4**

P.T.O.

(b) Draw block diagram of PAL encoder and describe function of each block. **4**

(c) Define : (i) Aspect ratio. **1**

(ii) Persistence of vision. **1**

(iii) Image continuity. **1**

(iv) Gross structure. **1**

(d) Describe with neat waveforms horizontal blanking pulses. **4**

(e) List advantages of PAL TV system. **4**

(f) Illustrate the basic fundamental of Digital TV transmission system. **4**

3. Attempt any FOUR : 16

(a) What are disadvantages of progressive scanning ? Describe interlace scanning. **4**

(b) Describe additive colour mixing with sketch. **4**

(c) Why FM is used for sound transmission and AM for video ? **4**

(d) Draw block diagram of digital TV transmission and describe function of each block. **4**

(e) What is requirement of V-sync Pulses in TV system ? **4**

(f) List advantages and disadvantages of digital TV system. **4**

4. Attempt any FOUR : 16

(a) Describe T.V. channel allocation for band-I & band-III. **4**

(b) Draw the schematic silicon diode array camera tube describe its operation. **4**

(c) Write the function of Banking pulses and D.C. level, pedestal height. **4**

(d) Describe suppressed colour sub-carrier transmission. **4**

(e) Describe phasor diagram of PAL colour signal. **4**

(f) Differentiate between Bandwidth of colour signal over luminance signal. **4**

5. Attempt any FOUR : 16

(a) Draw neat diagram and write the process of separation of U and V signals. **4**

(b) Draw block diagram and give working of QAM for PAL system. **4**

(c) Describe the working of Vidicon Camera with neat diagram. **4**

(d) List CCIR-B standards for PAL colour TV. **4**

(e) Describe the utilization of interleaved space for colour signal transmission. **4**

(f) Draw visible light spectrum with wavelength and frequency. **4**

6. Attempt any FOUR : **16**

(a) Define : (i) Luminance **1**

(ii) HUE **1**

(iii) Saturation **1**

(iv) Contrast **1**

(b) Describe vertical resolution and horizontal resolution. **4**

(c) Colour signal is suppressed before transmission of TV signal, give reason. **4**

(d) State the features and characteristics of HD signal transmission. **4**

(e) Draw colour composite video signal and label it. **4**

(f) Draw block diagram of HDTV and describe function of each block. **4**

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