

17441

11920

3 Hours / 100 Marks

Seat No.

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- 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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) Attempt any SIX of the following: 12
- (i) Define
 - (1) Aspect ratio
 - (2) Interlace scanning
 - (ii) What would be the effect on TV picture if aspect ratio is not maintain?
 - (iii) List CCIR-B standards.
 - (iv) Define colour burst signal in colour TV signal.
 - (v) Define Grassman's Law.
 - (vi) Draw CCVS signal and label it.
 - (vii) Why (G–y) signal is not transmitted in colour TV system.
 - (viii) Compare positive and negative AM modulated picture carrier. (any two points)

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- b) **Attempt any TWO of the following:** **8**
- (i) What is VSB transmission and draw its frequency response.
 - (ii) Draw well labeled horizontal blanking details of one horizontal line and give the function of back porch.
 - (iii) Draw labeled schematic diagram of vidicon camera tube and state its working.
2. **Attempt any FOUR of the following:** **16**
- a) Describe the concept of persistence of vision to create the motion picture.
 - b) Explain pedestal height with neat diagram.
 - c) Explain the working of CCD camera.
 - d) Draw block diagram and working of QAM for PAL system.
 - e) Explain the different factors which influence the choice of colour subcarrier in PAL TV system.
 - f) Draw block diagram of digital TV signal transmission and state the function of each block.
3. **Attempt any FOUR of the following:** **16**
- a) What is Kell factor? How does it affect vertical resolution of T.V. signal.
 - b) Define the terms
 - (i) Brightness
 - (ii) Contrast
 - (iii) Viewing distance
 - (iv) Luminance
 - c) Why FM is used for sound signal transmission and AM for video signal transmission in TV.
 - d) Describe the characteristics of digital TV transmission.
 - e) Explain how differential phase error is eliminated in PAL TV system.
 - f) List advantages and disadvantages of digital TV system (two points each)

- 4. Attempt any FOUR of the following:** **16**
- a) Describe the term
 - (i) Horizontal resolution
 - (ii) Vertical resolution
 - b) Describe the T.V. channel allocation for band I and Band III.
 - c) Draw neat block diagram of silicon diode array camera tube.
 - d) Describe suppressed colour sub-carrier transmission.
 - e) Why burst signal in PAL TV is called swinging colour burst?
 - f) Draw block diagram of PAL transmitter.
- 5. Attempt any FOUR of the following:** **16**
- a) Draw neat diagram and write the process of separation of U and V signal.
 - b) Why vertical sync pulses are serrated during TV signal transmission?
 - c) Draw block diagram of monochrome TV transmitters.
 - d) Describe the details of vertical blanking period.
 - e) Describe the utilization of interleaved space for colour signal transmission.
 - f) Give importance of DC level in CVS.
- 6. Attempt any FOUR of the following:** **16**
- a) Draw visible light spectrum with wave length and frequency.
 - b) Why colour signal is suppressed before transmission of TV signal.
 - c) Draw neat phasor diagram of weighted primary and secondary colours.
 - d) State the features and characteristics of HD signal transmission.
 - e) Draw block diagram of PAL encoder.
 - f) Draw block diagram and working of HDTV transmitter.
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