

17537

14115

3 Hours / 100 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Use of Non-programmable Electronic Pocket Calculator is permissible.
- (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) Attempt any **THREE** of the following: **12**
- (i) State necessity of cross-over network. Draw two way cross over net work and explain its working.
- (ii) Draw neat sketch of Dish antenna and list any four specifications of Dish antenna.
- (iii) Define the following terms with respect to TV system.
- 1) Hue
 - 2) Saturation
 - 3) Chrominance signal
 - 4) Brightness
- (iv) List the types of drive motors used in TV system.

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- b) **Attempt any ONE of the following:** **6**
- (i) Why negative modulation is used in TV system instead of positive modulation. Justify your answer with respect to following points:
- 1) Effect of noise of picture signal
 - 2) Effect of noise on synchronization
 - 3) Peak power available
- (ii) Draw circuit diagram of RGB drive amplifier and explain its working.
- 2. Attempt any FOUR of the following:** **16**
- a) State working principle and working of LCD TV with appropriate diagram.
 - b) Compare additive colour mixing with subtractive colour mixing with respect to any four points.
 - c) Draw sketch showing constructional details of yagi-uda antenna.
 - d) Explain data detection technique used in CD player with the help of neat sketch.
 - e) Describe NHK MUSK system for HDTV.
 - f) Compare Mono amplifier system with stereo amplifier system.
- 3. Attempt any FOUR of the following:** **16**
- a) Draw block diagram of DTH system and explain its operation.
 - b) With the help of suitable diagram, explain how U and V signals are separated in colour TV.
 - c) Draw block diagram of Hi-fi audio amplifier. State any four characteristics of Hi-fi system.
 - d) List any four advantages of fluroscent display system used in CD player.
 - e) State any eight CCIR-B standards for colour signal transmission and reception.

4. a) **Attempt any THREE of the following:** **12**
- (i) What is meant by flicker? How flicker is eliminated by interlaced scanning? Explain.
 - (ii) State principle and explain working of Delta gun picture tube with the help of neat sketch.
 - (iii) Draw block diagram of CD player.
 - (iv) Draw typical cable TV network plan and state the function of different types of amplifiers used in cable TV system.
- b) **Attempt any ONE of the following:** **6**
- (i) Draw circuit diagram showing how EHT supply is generated from line output stage in colour TV.
 - (ii) Draw composite video signal showing all details and explain the following terms:
 - 1) DC level
 - 2) Blanking level
 - 3) Whiter than white level
 - 4) Pedestal height
5. **Attempt any TWO of the following:** **16**
- a) Draw block diagram of PAL-D-Decoder and explain its working in detail.
 - b) State importance of LNBC. Draw block diagram of LNBC and explain its working in detail.
 - c) Draw block diagram of colour TV transmitter (Encoder) and explain its working in detail.

6. Attempt any FOUR of the following:**16**

- a) Define the term resolution with respect to TV. system. Explain the term horizontal resolution and vertical resolution in detail.
 - b) State principle and explain working of Vidicon camera tube with the help of neat sketch.
 - c) Draw block diagram of closed circuit TV (CCTV) system and explain function of each block.
 - d) Compare following types of loud speakers with respect to any four points. (as frequency range, size, sketch, application, their frequency response etc.)
 - e) State TV channel allocation for Band I and Band III.
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