



# 17537

**15162**

**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) **Assume suitable data, if necessary.**  
(5) **Use of Non-programmable Electronic Pocket Calculator is permissible.**  
(6) **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) Define audio amplifier. State its type. Draw its frequency response curve.
  - ii) State the advantages of fluorescent display system (any four).
  - iii) Define the following terms :
    - i) Aspect ratio
    - ii) Scanning
    - iii) Image continuity
    - iv) Pixels.
  - iv) List any eight specifications of dish antenna.
- b) Attempt **any one** of the following : **6**
- i) Draw block diagram of colour TV transmitter and label it.
  - ii) Describe how separation of U and V signals are achieved in colour TV with the help of neat sketch (diagram).
2. Attempt **any four** of the following : **16**
- a) Draw and describe Yagi - Uda antenna with neat sketch and its radiation pattern.
  - b) Draw composite video signal and label its various parts.
  - c) Describe NHK, MUSK system for HDTV.
  - d) Draw the block diagram of CD player.
  - e) State working principle of LCD TV with appropriate diagram.
  - f) Draw basic cross over network and draw its response curve.

**P.T.O.**



- 3. Attempt any four of the following :** **16**
- a) Draw the block diagram of dB meter and describe its working principle.
  - b) Draw and describe the circuit diagram for generating EHT.
  - c) Compare Woofer, Squawker and Tweeter with respect to definition, size, weight and frequency range.
  - d) State the functions of various drive motors in CD player.
  - e) Draw with label the details of horizontal sync pulse.
- 4. a) Attempt any three of the following :** **12**
- i) Compare between additive colour mixing and subtractive colour mixing with respect to working principle, sketch, application and primaries used.
  - ii) Draw and describe the working of vidicon camera tube.
  - iii) With the help of neat sketch, describe working of 'pick up unit' of a CD player .
  - iv) Draw the layout diagram for distribution of cable connection for MATV and describe it.
- b) Attempt any one of the following :** **6**
- i) Draw the block diagram of PAL-D decoder. Describe the function of each block.
  - ii) State TV channel allocation for band I and band III.
- 5. Attempt any two of the following :** **16**
- a) Compare between positive and negative modulation (any four points).
  - b) What is CCTV ? State its use. Compare CCTV with MATV (any four points).
  - c) Draw and describe the principle of delta gun tube and precision in line (PIL) picture tube.
- 6. Attempt any four of the following :** **16**
- a) State the need for pre-equalising and post equalising pulses in composite video signal.
  - b) Draw the block diagram of colour TV receiver.
  - c) State the need of multiplexer and attenuator in cable TV.
  - d) Draw and describe the block diagram of Hi-Fi amplifier.
  - e) State any eight CCIR-B standard for colour signal transmission and reception.
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