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.
(6) Use of Non-programmable Electronic Pocket Calculator is permissible.
(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. A) Attempt any three: 12
    a) Compare stereo amplifier and mono amplifier. (Any four points).
    b) Why dish antenna is having parabolic shape and meshy surface? List any four specifications of dish antenna.
    c) Define Aspect ratio. Why width of the TV screen is more than height?
    d) List the different lenses used in CD player. State their functions.

    B) Attempt any one: 6
    a) Describe the working principle and construction of Delta gun picture tube.
    b) Draw the block diagram of PAL-D decoder. Describe the function of each block.

2. Attempt any four: 16
    a) Describe how separation of U and V signals is achieved in colour T.V. with the help of suitable circuit diagram.
    b) Draw neat labelled sketch of composite video signal.
    c) Draw the colour killer circuit. Describe its working. Why and where it is used?
    d) Describe the working of pick-up assembly of CD player with the help of neat sketch.
    e) Describe NHK and MOSE system for HDTV.
    f) Draw the circuit of three way cross over network. Illustrate distribution frequencies of respective speakers.

P.T.O.
3. Attempt any four:
   a) Draw and describe DTH system.
   b) Draw the circuit diagram of RGB drive amplifier and describe its operation.
   c) Describe operation of Dolby A system of noise reduction.
   d) List any four advantages of fluorescent display system used in CD player.
   e) State any eight CCIR-B standard for colour signal transmission and reception in TV.

4. A) Attempt any three:
   a) Describe interlace scanning in brief. How interlace scanning help to reduce bandwidth of video signal?
   b) Describe VSB transmission. State its any four advantages.
   c) Draw neat labelled block diagram of CD player.
   d) Compare CATV and CCTV (any four points).

   B) Attempt any one:
   a) Compare NTSC, PAL and SECAM system (any six points).
   b) Describe why equalising pulses are required. Draw the vertical synchronising pulse structure.

5. Attempt any two:
   a) Describe the construction and working of PIL picture tube.
   b) Draw the neat block schematic of MATV system. Describe the function of each block.
   c) Draw the block diagram of colour TV transmitter. Describe the function of each block.

6. Attempt any four:
   a) Compare additive and subtractive colour mixing.
   b) List the TV channel allocation for band I and band III.
   c) Describe the working of LNBC with the help of block diagram.
   d) Describe the functions of following in Hi-Fi amplifier:
      i) Balance control
      ii) Loudness control
      iii) Bass and treble control
      iv) Quasi stable control.
   e) Describe vertical resolution and horizontal resolution in brief.