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.

1. A) Attempt any three: 12
   a) Compare between woofer, tweeter and squawker on the basis of following parameters. 
      i) Frequency response ii) Cross over network 
      iii) Cost iv) Application. 
   b) Draw the block diagram of dB meter with neat label. 
   c) Define the following terms: 
      i) Contrast ii) Luminance 
      iii) Hue iv) Saturation. 
   d) State any four advantages of vacuum fluorescent display.

1. B) Attempt any one: 6
   a) Draw the block diagram of Colour TV transmitter and write the function of each block. 
   b) What is EHT? Describe its need. Draw the circuit diagram for EHT generation using diode split addition technique.

2. Attempt any four: 16
   a) Describe the principle of LCD with neat sketch. 
   b) List the frequencies of TV channel allocation for band I and band III. 
   c) Describe NHK and MUSE system. 
   d) Describe the working of pick-up unit of a CD player with neat sketch. 
   e) Draw the block diagram of PAL-D decoder. 
   f) State the requirement of stereo amplifier to becomes Hi-Fi amplifier (any four).
3. Attempt any four:
   a) Draw the layout diagram for distribution of cable connection for MATV and describe it.
   b) Differentiate NTSC with PAL with respect to types of chrominance modulation, line frequency, field frequency and used in which countries.
   c) Draw and describe the block diagram of Hi-Fi amplifier.
   d) Describe the block diagram of CD player with neat block diagram.
   e) Define vestigial sideband transmission. State its any two merits and demerits.

4. A) Attempt any three:
   a) Describe with neat sketch how interlaced scanning will help to reduce the bandwidth of the video signal.
   b) List any two merits and demerits of negative modulation.
   c) State the function of tray motor and slide (feed) motor.
   d) Draw the Yagi-Uda antenna and its radiation pattern. Explain its working.

4. B) Attempt any one:
   a) Draw the circuit diagram of RGB drive amplifier used in colour TV. Explain the function of each component used in it.
   b) Describe why equalizing pulses are required. Draw the vertical synchronizing pulse structure.

5. Attempt any two:
   a) Draw the block diagram of Colour TV receiver. How signal is processed in each block?
   b) Draw and describe the block diagram of LNBC. List its any two application.
   c) Describe the Principle of (PIL) precision in line and delta gun picture tube with neat sketch.

6. Attempt any four:
   a) State Grassman’s law. Draw the sketch of additive mixing.
   b) Why Amplitude Modulation (AM) is preferred for picture signal and FM is preferred for sound signal in TV system?
   c) Describe the need of multiplexer and attenuator in cable TV.
   d) Compare mono amplifier and stereo amplifier.
   e) Draw composite video signal with label.