

- N.B. :** (1) Question No. 1 is **compulsory**.  
 (2) Attempt any **four** questions from the remaining **six** questions.  
 (3) **Figures to right** indicate **full** marks.  
 (4) Assume **suitable** data if **necessary**.

1. Answer the following :- 20
  - (a) Explain 'reverse compatibility'.
  - (b) What is a chromaticity diagram ?
  - (c) What is the function of SAW filter ?
  - (d) Explain additive and subtractive mixing of colours.
  
2. (a) Explain interlaced scanning with the help of a neat diagram. How is it better than sequential scanning ? 10  
 (b) Draw the diagram of CVS and explain the various components. How is half line discrepancy removed using Pre and Post equalising pulses ? 10
  
3. (a) Draw the block diagram of a monochrome TV receiver and explain the working. Draw all the waveforms at different points. 10  
 (b) Draw the diagrams and compare the PIL, Delta gun and Trinitron Picture tubes. 10
  
4. (a) What is the function of the following in a TV receiver ? 10
  - (i) Comb filter
  - (ii) Degaussing Coil
  - (iii) Aluminium coating behind phosphor in a picture tube.
  - (iv) Fly-back transformer
  - (v) Sync. separator.
- (b) Starting from the RF Tuner to the picture tube, explain the various alignments and adjustments required to be made at various stages of a TV receiver during manufacturing. 10
  
5. (a) With the help of neat sketch, explain the functioning of an image orthicon camera tube. What are its drawbacks ? 10  
 (b) With the help of a neat diagram explain the functioning of cable television. 10
  
6. (a) Explain the functioning of an NTSC coder and decoder with the help of a neat diagram. 10  
 (b) Give reasons for the following :- 10
  - (i) (G-Y) signal is not selected for transmission
  - (ii) Aspect ratio of 4 : 3 is chosen for TV.
  - (iii) Electrostatic focusing and electromagnetic deflection is used in TV.
  - (iv) All TV standards have odd no. of scanning lines.
  
7. Write short notes on any three :- 20
  - (a) HDTV
  - (b) CCD Camera
  - (c) CCTV
  - (d) Digital TV.