



12190

13141

3 Hours/100 Marks

Seat No.

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- 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**.

MARKS

1. A) Attempt **any three** : **(3×4=12)**
  - a) Explain Dolby-NR recording system in brief.
  - b) List four advantages of compact disc.
  - c) What is VSB transmission ? State its merits.
  - d) Explain the working of Yagi-Uda antenna with sketch.

B) Attempt **any one** : **(1×8=8)**

  - a) What is EHT ? Explain its need. Draw the circuit diagram for EHT generation and explain its working.
  - b) Compare positive and negative modulation and list the merits and demerits of negative modulation.
2. Attempt **any four** : **(4×4=16)**
  - a) Explain the function of following in Hi-Fi amplifier :
    - i) Balance control
    - ii) Loudness control
    - iii) Bass and treble control
    - iv) Quasi stable switch.
  - b) Draw and explain the diagram of PIL picture tube.
  - c) What do you understand by vertical and horizontal resolution in TV system ?
  - d) What do you understand by interlaced scanning ? Explain how it will help to reduce the bandwidth of video signal.
  - e) List specification of dish antenna used in cable TV.

P.T.O.



(4×4=16)

3. Attempt **any four** :

- a) Give vertical synch pulse details.
- b) Why dish antenna is parabolic in shape and meshy surface ?
- c) State and explain Grassman's law for subtractive colour mixing.
- d) What is the need of terminating resistance in MATV ?
- e) Explain the function of following in CD mechanism. :
  - 1) Drive motors
  - 2) CD lens.

4. A) Attempt **any two** :

(2×4=8)

- a) Explain block diagram of db meter.
- b) With a neat diagram explain function of CD pick-up assembly.
- c) State and explain the concept of graphic equalizer.

B) Attempt **any one** :

(1×8=8)

- a) Draw the block diagram of PAL-D receiver. Explain how signal is processed in each block.
- b) Draw the block diagram of colour TV transmitter and explain its working in detail.

5. Attempt **any four** :

(4×4=16)

- a) Explain the preference of FM over AM for sound signal transmission in TV.
- b) Explain the need of multiplexer and attenuator in cable TV.
- c) Explain how separation of U and V signals is achieved in colour TV.
- d) Explain the working of solid state camera based on CCD.
- e) Give any four CCIR-B standards for colour TV reception.

6. Attempt **any four** :

(4×4=16)

- a) What is the necessity of cross over network ? Explain with diagram.
  - b) Draw the composite video signal and label all the parts.
  - c) Explain the following terms with respect to colour signal :
    - i) Hue
    - ii) Saturation
    - iii) Luminance.
  - d) Explain principle and working of Delta Gun picture tube.
  - e) Explain the function of CD player with neat block diagram.
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