



17537

11819

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**.*

Marks

1. A) Attempt **any three** :

12

- a) Draw the cross over network circuit and state its function.
- b) List specifications of cable TV.
- c) Define : i) Aspect ratio ii) Image continuity w.r.t. T.V. system.
- d) State the advantages of vacuum fluorescent.

B) Attempt **any one** :

6

- a) Draw block diagram of colour TV transmitter and mention the function of each block.
- b) State and explain the working principle of LED TV systems. List its advantages.

2. Attempt **any four** :

16

- a) Describe the development of HDTV and its associated system.
- b) Define the following terms :
 - i) Hue
 - ii) Luminance
 - iii) Viewing distance
 - iv) Saturation
- c) Draw the block diagram and explain operation of PAL-D decoder.
- d) List and describe the functions of front panel controls of CD player mechanism.
- e) Draw the basic circuit for the separation of U and V signals and describe its working.
- f) Differentiate between stereo amplifier and mono amplifier.

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3. Attempt **any four** : 16
- a) State and explain the working principle of LNBC.
 - b) Draw the construction and state the operating principle of Yagi-Uda antenna.
 - c) Draw the circuit diagram of graphic analyzer and describe its operation.
 - d) Explain the functions of the following :
 - i) CD pick-up assembly
 - ii) CD gear system.
 - e) State and explain Grassman's law.
4. A) Attempt **any three** : 12
- a) Describe the following w.r.t. composite video signal :
 - i) Pedestal height
 - ii) Blanking pulse
 - b) State the merits and demerits of negative modulation.
 - c) Draw the block diagram of CD player and explain its operation.
 - d) Describe the working of dB meter and state its working principle.
- B) Attempt **any one** : 6
- a) Draw the circuit diagram of RGB drive amplifier and explain it.
 - b) Describe the following terms in TV :
 - i) Horizontal sync pulse details
 - ii) Vertical sync pulse details.
5. Attempt **any two** : 16
- a) Describe the working principle of PIL colour picture tube. State its advantages w.r.t. trinitron picture tube.
 - b) i) Draw the block diagram of DTH system.
ii) Interpret the architecture of cable TV network.
 - c) Draw the block diagram of PAL D type color TV receiver label it well.
6. Attempt **any four** : 16
- a) State CCIR-B standards used for TV system.
 - b) Describe the principle of operation of solid state camera based on CCD.
 - c) Draw the constructional details of dish antenna and state its working principle.
 - d) Compare between woofer, midrange and tweeter.
 - e) Explain the following terms in colour theory w.r.t. TV :
 - i) Primary colours.
 - ii) Secondary colours.
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