

17547

**11920**

**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.

- |   | <b>Marks</b> |
|---|--------------|
| <b>1. (A) Attempt any THREE :</b>   | <b>12</b>    |
| (a) Draw the circuit diagram of ACC amplifier. Describe its operation.                            |              |
| (b) Draw the diagram of remote control receiver for TV. Describe its function.                    |              |
| (c) Why microcontroller is used in TV Receiver ?  |              |
| (d) Describe frequency synthesizer tuning with labelled diagram.                                  |              |
| <b>(B) Attempt any ONE :</b>  | <b>6</b>     |
| (a) Draw the block diagram of PAL-D decoder and write the function of each block.                 |              |
| (b) State 3D effect. Write the techniques develop to create a 3D effect.                          |              |
| <b>2. Attempt any FOUR :</b>  | <b>16</b>    |
| (a) Draw forward type SMPS and list any two merits and demerits.                                  |              |
| (b) Draw schematic diagram of EHT generation and write its working principle.                     |              |
| (c) Draw Luminance signal processing circuit diagram.   |              |
| (d) List any eight major controls available in Plasma TV. State the function of any two controls. |              |
| (e) Draw and describe basic structure of saw filter.  |              |
| (f) Compare LCD and LED TV (any 4 points).  |              |

- 3. Attempt any FOUR :** **16**
- (a) Draw neat diagram showing details of Horizontal output amplifier and explain its working.
  - (b) Draw the schematic diagram of IC 760 g and state its function.
  - (c) Draw and describe hyper band tuner with vericap tuning.
  - (d) State need of AGC and AFT in TV system.
  - (e) With suitable circuit diagram, describe how separation of U and V signals are achieved in colour TV.
- 4. (A) Attempt any THREE :** **12**
- (a) Describe with neat diagram the working principle of Trinitron picture tube.
  - (b) State the need of reference oscillator and draw its circuit diagram.
  - (c) Compare Plasma TV and 3D TV.
  - (d) Draw the block diagram of sync separator. Describe the function of each block.
- (B) Attempt any ONE :** **6**
- (a) Illustrate with suitable circuit diagram how IDENT and KILLER outputs are obtained from the burst phase discriminator outputs.
  - (b) Draw the block diagram of colour TV receiver and describe function of each block.
- 5. Attempt any TWO :** **16**
- (a) Draw the circuit diagram of horizontal output amplifier. Describe its working.
  - (b) Draw the block diagram of push pull SMPS and describe function of each block.
  - (c) Draw the block diagram of sweep section and explain the function of each block.
- 6. Attempt any FOUR :** **16**
- (a) Describe the working of LED TV with neat diagram.
  - (b) State advantages and disadvantages of remote control system.
  - (c) Explain autostereoscope method of 3D TV.
  - (d) Describe the processes of formation of picture pixels in plasma TV. State its features.
  - (e) Explain the generation of sound IF using IC 1190 with schematic diagram.
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