17547

14115

3 Hours / 100 Marks Seat No. | | | | | | | | |

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 <u>THREE</u> of the following:** **12**

(i) State necessity of adder and subtractor circuit in PAL-D decoder.

(ii) Draw block diagram of sync. separator and describe its working.

(iii) Justify the use of microcontroller in TV receiver.

(iv) Draw construction of SAW filter. Why pre-amplifier is needed before the SAW filter.

b) **Attempt any <u>ONE</u> of the following:** **6**

(i) Draw ckt. diagram of ident and colour killer ckt. and describe its operations.

(ii) Draw construction of trinitron picture tube and describe tis working.

Marks

2. Attempt any <u>FOUR</u> of the following: **16**

a) Draw block diagram of SMPS. State the functions of each block.

b) Draw ckt. diagram of ACC amplifier and describe its working.

c) Illustrate the operation of forward SMPS with neat circuit diagram.

d) State the purpose of remote control system in TV. State its advantages and disadvantages (any two of each).

e) State the features of plasma TV (any four).

f) Draw the block diagram of remote control transmitter and receiver.

3. Attempt any <u>FOUR</u> of the following: **16**

a) Draw block diagram of push-pull SMPS and state the function of each block.

b) Draw block diagram of microcontroller based TV.

c) Draw block diagram of VIF stage in colour TV receiver and draw its response curve.

d) Draw ckt. diagram of reference oscillator and state its need in PAL-D decoder.

e) Compare plasma and LCD display technology (any four points).

4. a) **Attempt any <u>THREE</u> of the following:** **12**

(i) Explain with the suitable diagram how an LCD display works.

(ii) State the need of AGC and AFT in colour TV receiver.

(iii) Explain the working principle of plasma screen.

(iv) Draw ckt. diagram of vertical output amplifier and describe its working.

b) **Attempt any <u>ONE</u> of the following:** **6**

(i) Draw schematic diagram of VIF IC and state the function of each block.

(ii) Draw ckt. diagram of luminance signal processing and describe its working.

Marks

5. Attempt any <u>TWO</u> of the following: **16**

a) Draw block diagram of colour TV receiver. State the function of each block.

b) Draw schematic diagram of IC 7609 and state the function of each block.

c) Draw block diagram of PAL-D decoder and state the function of each block.

6. Attempt any <u>FOUR</u> of the following: **16**

a) Draw block schematic of AFT and state the function of each block.

b) List any eight major controls available in plasma TV. State the function of any two controls.

c) Explain with diagram working of $freq^n$ synthesizer tuning.

d) What is 3D TV technology? Why it is necessary to use special glasses for watching 3D programmes?

e) Draw construction of chroma delay line and describe its working.

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