(3 Hours) **[Total Marks: 80]**

N.B.: (1) Question No. 1 is compulsory.
(2) Answer any Three out of remaining five questions.
(3) Draw the neat diagrams wherever necessary.

1. (a) Explain active and passive matrix of LCD. 05
(b)In TV why AM is preferred over FM for picture modulation. 05
(c)Explain when and why the horizontal sweep oscillator step out of synchronism. 05
(d) What is the need of MUSE system. 05

2. (a) Draw and explain Horizontal sync details compared to horizontal deflection saw tooth wave. 10
(b) Explain D2-MAC packet format for sound/Data signal. 10

3. (a) Why are serrations needed in vertical sync pulses and how it solves the problem of half-line discrepancy? Explain with diagram. 10

(b) Draw and explain Image orthicon camera tube. What is the function of the electron multiplier section? 10

4. (a) Draw and explain NTSC decoder along with the explanation for Phasor diagrams of the signals in the NTSC system. 10
(b) In relation to digital TV discuss?
- Digitization,
- pixel array,
- scanning notation,
- viewing distance and angle,
- aspect ratio,
- frame rate and refresh rate. 10

5.(a)Explain with diagram wide dimension HDTV. 10
(b) What is the difference between component video and composite video? Give the main features of CCIR Rec.601for digital video standards. 10

6. Write short notes on (any two): ---
(a) EBU MAC system. 20
(b) VSB Transmission for TV, how much frequency is allocated for attenuation slope and why?
(c) Sync pulse separation and generation of vertical and horizontal sync pulses.

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