

C.U.SHAH UNIVERSITY

Summer Examination-2016

Subject Name: Audio Video Engineering

Subject Code: 4TE06AVE1

Branch: B.Tech (EC)

Semester: 6 Date: 11/05/2016 Time: 2:30 To 5:30 Marks :70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
 - (2) Instructions written on main answer book are strictly to be obeyed.
 - (3) Draw neat diagrams and figures (if necessary) at right places.
 - (4) Assume suitable data if needed.
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Q-1

Attempt the following MCQ:

(14)

- a) Camera signal output without sync is called

[A]. Black burst [B]. noncomposite video [C]. composite video [D]. generator lock video

- b) Which of the following is the most negative (or least positive) electrode is the electron gun?

[A]. Control grid G1 [B]. Cathode [C]. Screen grid [D]. Focus grid

- c) Where are the permanent magnets used?

[A]. resetting the yoke [B]. dynamic convergence [C]. automatic degaussing

[D]. static convergence

- d) _____ is more important for the gamma correction for the camera tube.

[A]. Monochrome [B]. Both Color and monochrome [C]. Color [D]. Either of Color or monochrome

- e) What is the color of P1 screen phosphor?

[A]. Red [B]. Green [C]. White [D]. Blue

- f) The coils above and below the electron beam of the picture tube are for _____.

[A]. H scanning [B]. V scanning [C]. Either V or H scanning [D]. None of these



- g) For the picture tube, the brightness control varies the ___ bias signal drive.
 [A]. both dc and ac [B]. ac [C]. either ac or dc [D]. dc
- h) Which of the following takes more time?
 [A]. H retrace [B]. H trace [C]. V retrace [D]. V trace
- i) The number of lines scanned per frame in the raster on the picture tube screen is
 [A]. 262 [B]. 525 [C]. 20 [D]. 10
- j) Which signal needs a 0.6- μ s time delay?
 [A]. Y video [B]. B-Y video [C]. Color burst [D]. RGB signal
- k) Which of the following stages must be on during horizontal flyback time?
 [A]. Y video amplifier [B]. chroma BPA [C]. R-Y video amplifier [D]. burst separator
- l) How many horizontal lines are in the odd or an even fields?
 [A]. 460 [B]. 525 lines $10 \frac{1}{2}$ [C]. $262 \frac{1}{2}$ lines [D]. 600 lines
- m) The R, G, and B video drive controls are set for ___ in the picture.
 [A]. gray [B]. white [C]. black dark [D]. green
- n) In the sawtooth waveform for linear scanning
 [A]. the complete cycle includes trace and retrace [B]. the linear rise is for flyback [C]. the sharp reversal in amplitude produces trace [D]. the beam moves faster during trace than retrace.

Attempt any four questions from Q-2 to Q-8

Q-2

Attempt all questions

(14)



- (a) Draw and explain picture signal transmission. Also explain vestigial Transmission in detail.
- (b) Draw block diagram of monochrome TV receiver and explain

Q-3 Attempt all questions (14)

- (a) Draw and explain composite video signal and sideband spectrum of two adjacent channels of the lower VHF band of television station allocations
- (b) Draw and explain vertical and horizontal sync detail.

Q-4 Attempt all questions (14)

- (a) Draw the block diagram of color TV transmitter and explain each block in detail.
- (b) Give comparison of NTSC , PAL and SECAM color systems

Q-5 Attempt all questions (14)

- (a) What is luminance and chrominance signal? State its significance. Explain separation of U and V color phasors in detail.
- (b) Draw the block diagram of PAL-D decoder. Explain the importance of ACC amplifier, burst phase identification and Color killer.

Q-6 Attempt all questions (14)

- (a) Draw block diagram of color TV receiver. Explain it.
- (b) Draw and explain vidicon camera tube.

Q-7 Attempt all questions (14)

- (a) Sketch the sectional view of a picture tube that employs electrostatic focusing and electromagnetic deflection and label all the electrodes.
- (b) Explain Acoustic Design of Auditoriums with different component.

Q-8 Attempt all questions (14)

- (a) Explain HDTV.
- (b) Explain HDMI and USB interface

