

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE Sem-VI Summer Exam 2012

Subject code: 161002

Subject Name : Audio video systems

Date:11/05/2012

Total Marks: 70

Time duration:10:30am to 1.00pm

Instructions:

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

- Q.1**
- (a) Explain the working principle of moving coil microphone with the help of neat sketch. Write its characteristics and applications. **07**
- (b) (i) Describe the meaning of Luminance, Hue and Saturation as applied to colour picture. **07**
(ii) What do you understand by compatibility between monochrome and colour TV systems and how is this achieved. Why (G-Y) is not chosen for transmission?

- Q.2**
- (a) Justify the choice of 625 lines for TV transmission. Why the total number of lines kept odd in all television systems. Explain briefly interlaced scanning with necessary waveforms. **07**
- (b) What is the meaning of the following terms pertaining to sound? **07**
(i) Loudness (v) Reverberation
(ii) Pitch (vi) Threshold of hearing
(iii) Phon (vii) Timbre
(iv) Sone

OR

- (b) (i) Give characteristics of Digital Audio Broadcasting. Write its advantage and disadvantages. **07**
(ii) What is digital audio compression? Why is it used? Explain briefly different formats of digital audio compression.

- Q.3**
- (a) Explain Briefly : (i) Woofers and Tweeters. **07**
(ii) Sound cards and Mixers.
- (b) Write short note on : Stereophony and multichannel sound. **07**

OR

- Q.3**
- (a) (i) Write advantage and disadvantages of LCD TV. **07**
(ii) Compare Plasma TV with LED TV.
- (b) Explain following for digital video: **07**
(i) Video compression
(ii) Non-linear editing
(iii) 4 : 3 to 16 : 9 aspect ratio conversion.

- Q.4**
- (a) What is the main difference between monochrome and colour TV transmitter. Draw a simplified block diagram of monochrome TV transmitter and label all the blocks. **07**

- (b) Explain briefly for television signal transmission and propagation : **07**
(i) Standard channel bandwidth
(ii) Interference suffered by TV signals

OR

- Q.4** (a) Write characteristics of a good loudspeaker. Explain working principle of horn type loud speaker. **07**
(b) (i) Give comparison of NTSC , PAL and SECAM colour systems **07**
(ii) Explain briefly preamplifier requirements and performance standards for sound amplification

- Q.5** (a) Draw block diagram of PAL-D colour receiver. **07**
(b) Explain briefly for monochrome TV receiver; **07**
(i) VHF Tuner
(ii) Video Amplifier

OR

- Q.5** (a) Explain with suitable block diagram the basic principle of comb filter. How the chrominance and luminance signals are separated by a comb filter without any loss of chroma and Y signal bandwidth. **07**
(b) Explain why RGB matrixing is preferred in present day colour receivers? **07**
Describe with suitable diagram how R, G and B video signals are obtained from U and V signals.
