## **GUJARAT TECHNOLOGICAL UNIVERSITY**

## **BE - SEMESTER-V (NEW) - EXAMINATION - SUMMER 2017**

Subject Code: 2151101

Subject Name: Audio Video Systems

Time: 02:30 PM to 05:00 PM

Instructions:

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

## Q.1 Short Questions

- 1 A video consists of a sequence of
  - A. Frames
  - B. Signals
  - C. Packets
  - D. Slots

<sup>2</sup> If frames are displayed on screen fast enough, we get an impression of

- 1
  - A. Signals
  - B. Motions
  - C. Packets
  - D. Bits

<sup>3</sup> Most common compression technique that is used to create CDquality audio is based on perceptual encoding technique is called

- A. Predictive Encoding
- B. Perceptual Encoding
- C. MPEG
- D. JPEG
- <sup>4</sup> In Audio and Video Compression, each frame is divided into small grids, called picture elements or
  - A. Frame
  - B. Packets
  - C. Pixels
  - D. Mega Pixels
- <sup>5</sup> Streaming stored audio/video, files are compressed and stored on a
  - A. IP
  - B. Server
  - C. Domain
  - D. Internet

**Total Marks: 70** 

Date: 10/05/2017

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- 6 The number of lines scanned per frame in the raster on the picture tube screen is
  - A. 525
  - B. 262
  - C. 20
  - D. 10
- <sup>7</sup> Which of the following frequencies is wrong?
  - A. 15,750 Hz for horizontal sync and scanning
  - B. 60 Hz for vertical sync and scanning
  - C. 31,500 Hz for equalizing pulses and serrations in the vertical sync pulses
  - D. 31,500 Hz for the vertical scanning frequency
- 8 Which of the following takes more time?
  - A. H retrace
  - B. H trace
  - C. V retrace
  - D. V trace
- 9 How many horizontal lines are in the odd or an even field?
  - A. 10 <sup>1</sup>/<sub>2</sub>
  - B. 525 lines
  - C. 262 <sup>1</sup>/<sub>2</sub> lines
  - D. 600 lines
- 10 The gamma effects the of the picture tube.
  - A. contrast
  - B. Brightness
  - C. dullness
  - D. either the brightness or contrast
- <sup>11</sup> In the Term NTSC TV, C stands for
  - A. Color
  - B. Committee
  - C. Camera
  - D. Code
- <sup>12</sup> The luminance signal modulation in PAL System is
  - A. FM
  - B. AM (Negative)
  - C. AM (Positive)
  - D. None
- <sup>13</sup> Weighting factor of U is
  - A. 0
  - B. 1
  - C. 0.493
  - D. 0.877
- 14 Sound System uses in PAL System is
  - A. AM
  - B. FM
  - C. AMSC
  - D. AMVSB

Q.2	(a)	Compare JPEG and MPEG.	03
	(b)	Explain : Multichannel Sound	04
	(c)	Describe the construction of a carbon microphone and explain its functioning	07
		OP	
	(c)	Describe different characteristics of sound	07
03	$(\mathbf{c})$	Describe different characteristics of sound. Draw the block diagram of $\mathbf{B} \notin \mathbf{W}$ TV Transmitter	07
Q.3	$(\mathbf{a})$	Draw the block diagram of b & w 1 v Transmitter.	03
	$(\mathbf{D})$	What is characteristic impedance of loudspeaker? Explain various	04
	$(\mathbf{C})$	types of loudspeakers with diagram	07
0.2	(a)	Compare EDTV & HDTV	02
Q.3	(a) (b)	Compare EDTV & HDTV.	03
	(D)	(i) Video CD and DVD (ii) MD2 and Dlue row disc	04
	(-)	(I) VIGeo CD and DVD (II) MPS and Blue ray disc	07
	(C)	different formats of digital audio compression? why is it used? Explain briefly	07
0.4	(a)	How is EDTV different from the conventional television system?	03
<b>L</b> .	(b)	Compare LED TV & LCD TV.	04
	(c)	Explain how the luminance and color difference signals are developed from Camera outputs. Why is it necessary to set $Y = 0.3R$	07
		+ 0.59G + 0.11B?	
		OR	
04	<b>(</b> 2 <b>)</b>	Explain the following terms	03
<b>~</b> ··	(4)	(a) Hue (b) Saturation (c) Luminance	00
	(h)	Write a note on Servicing of TV	04
	$(\mathbf{c})$	Describe Plasma TV	07
05	(e) (a)	Write short note on: stereophony	03
<b>V</b>	$(\mathbf{u})$	Compare front projection system and rear projection system	04
	( <b>0</b> )	Draw and explain The Composite Video Signal in detail	07
	(C)	OR	07
05	(9)	Write a note on merits of Digital TV receivers	03
Q.J	(a) (h)	Write a note on OLED TV	03
	(D) (C)	What is interlaced scanning? How it is done? What are its merits over	07
		simple (progressive) scanning?	07

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