Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) - EXAMINATION – SUMMER 2016

Subject Code:2151101 **Date:13/05/2016**

Subject Name:Audio Video Systems

Time:02:30 PM to 05:00 PM **Total Marks: 70**

Instructions:

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

Q.1	**(a)**	Describe the construction of a carbon microphone and explain its functioning. Why is a carbon microphone not suitable for PA amplifier systems?	**07**
	(b)	(i) Describe with the help of a neat diagram the working of variable density method of optical recording of sound on films.	**04**
		(ii) Draw the cross section of cochlea and explain each part of it.	**03**
Q.2	**(a)**	Draw basic block diagram of an UP-LINK set-up and explain how the signals are compressed packetized and multiplexed before modulation and transmission.	**07**
	(b)	Show that a total channel bandwidth of 11.25 MHz would be necessary if both side bands of the modulated pictures are fully transmitted. Explain how the channel width is reduced to 7 MHz by allowing vestigial side band transmission.	**07**
		OR	
	(b)	Explain the meaning of brightness and contrast with respect to black and white pictures. What do you understand by gamma correction? What is the optimum distance for viewing television pictures?	**07**
Q.3	**(a)**	What is plasma? How its presence results in the flow of charge when a small voltage is applied across a plasma glass panel? How this results in the release of color photons?	**07**
	(b)	(i) Give comparison of LED TV & Plasma TV.	**03**
		(ii) What do you mean by OLED? Give brief introduction of OLED in detail.	**04**
		OR	
Q.3	**(a)**	Enumerate Distinguishing features of LCD colour receives when compared with Plasma receives. What is 'Slow Response Time' and how its effect is minimized in LCD screens.	**07**
	(b)	(i) Describe the factors you will consider before deciding on whether to buy Plasma or LCD television.	**04**
		(ii) Give differences between LED backlit & LCD displays.	**03**
Q.4	**(a)**	How is EDTV different from the conventional television system? Explain the MAC technique which enables separate transmission of luminance and chrominance signal to prevent mutual interference effects on the reproduced picture.	**07**
	(b)	(i) Write short note on following : (a) Digitally controlled cameras (b) Electronic Character generator	**04**
		(ii) Explain how you will locate the faults in a stereo amplifier.	**03**

OR

Q.4	**(a)**	(i) Explain high definition television (HDTV)	**04**
		(ii) Distinguish between direct view receivers & rear projection systems & explain how each system function to display pictures.	**03**
	(b)	Draw and explain the block diagram of 3-D picture & stereo sound television receiver.	**07**
Q.5	**(a)**	(i) Write Shorts note of following : (a) Split half method (b) Convergent Circuits	**04**
		(ii) What are the essential features of a sophisticated home theatre? Why is the location of speaker in the hall a very important feature?	**03**
	(b)	Explain the need for compression and how compression works.	**04**
		(ii) Explain audio as data	**03**

OR

Q.5	**(a)**	(i) Explain the following terms (a) Brightness (b) Contrast (c) Viewing distance (d) Luminance, Hue and Saturation.	**04**
		(ii) Explain time compression and expansion technique of digital audio.	**03**
	(b)	(i) Write short note on MPEG-x Format for video.	**04**
		(i) Write short note on following (a) Vertical resolution (b) Horizontal resolution	**03**

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