Government College of Engineering, Amravati
(An Autonomous Institute of Government of Maharashtra)

Eighth Semester B. Tech.
(Electronics and Telecommunication)

Summer – 2016

Course Code: ETU602

Course Name: Audio and Video Engineering

Time: 2 hr. 30min. **Max. Marks: 60**

Instructions to Candidate

1. All questions are compulsory. Attempt ANY TWO from Q1 and Q2.
2. Assume suitable data wherever necessary and clearly state the assumptions made.
3. Diagrams/sketches should be given wherever necessary.
4. Use of logarithmic table, drawing instruments and non-programmable calculators is permitted.
5. Figures to the right indicate full marks.

1	(a)	Elaborate the characteristics of microphone. Also write the principle of operation of an electrets microphone.	6
	(b)	Write in brief about 'Crossover Network'.	6
	(c)	Mention the need and types of baffles and enclosures.	6
2	(a)	Discuss the terms: Stereophony and Quadraphony.	6
	(b)	Write in detail about Equalization.	6
	(c)	Describe the process of call establishment	

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between two subscribers in a telephony system. Enlist the types of tones and discuss them. **6**

3 **(a)** Explain the formation of chrominance signal by quadrature modulation. **6**
Justify the sentence: By choosing a definite precise value of colour subcarrier the 'C' signal is frequency interleaved with the Y signal.

(b) Describe a PAL encoder. **6**

4 **(a)** Explain how the signals are compressed, packetized and multiplexed before modulation and transmission in a digital TV transmitter. **6**

(b) Explain how an RF input to the plasma TV receiver produces picture on the screen? **6**

5 **(a)** Enlist the types of Variable Length Coding. Illustrate with the help of suitable example. **6**

(b) Represent a digital audio broadcasting system in the form of blocks and explain it **6**

Government College of Engineering, Amravati
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Sixth Semester
B. Tech. (Electronics and Telecommunication)

Summer – 2017

Course Code: ETU602

Course Name: Audio and Video Engineering

Time: 2 Hrs. 30 Min. **Max. Marks: 60**

Instructions to Candidate

1) All questions are compulsory.
2) Assume suitable data wherever necessary and clearly state the assumptions made.
3) Diagrams/sketches should be given wherever necessary.
4) Use of logarithmic table, drawing instruments and non-programmable calculators is permitted.
5) Figures to the right indicate full marks.

1. Solve the Following

a) What are the characteristics of microphones? Explain. Also write the significance of polar diagram. **06**

b) i) Describe the services available to the subscribers of electronic exchange. **03**

ii) Discuss DTMF dialing process. **03**

2. Solve any TWO **12**

a) What are the requirements of an ideal loudspeaker? Explain the working of permanent

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magnet dynamic loudspeaker with neat diagram.

b) Explain the difference between monophonic, stereophonic and quadraphonic sound system.

c) i) How infinite baffles were evolved?
ii) Draw and explain the working of two way cross over network.

3. Solve any TWO 12

a) What forms the basis of electronic music synthesis? How will you assemble a synthesizer? Explain.

b) Name the primary and complementary colours used in colour television. What is GRASSMAN's law? Explain how the three primary colours combine to form white. What determines the ratio of red, green and blue?

c) Explain the constructional details of Plasma television screen. Also discuss the distinguishing features of a plasma colour receiver.

4. Solve any TWO 12

a) What do you mean by intra-frame compression technique? Discuss DPCM-DCT based transform coding.

b) Draw a functional block schematic of digital colour TV receiver and describe how it functions to produce digital video and audio signal.

c) A flat panel television receiver is one in which the conventional picture tube is replaced by a flat panel display. Draw an explain the elements of an active matrix drive and deflection flat panel picture display system

5. Solve the Following 12

a) Draw the block schematic of digital audio broadcasting and explain the function of each block.

b) Creating a Liquid Crystal Display (LCD), what are the four factors that enable making of LCD panels? Also explain the operation of LCD display.