

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VI • EXAMINATION – SUMMER • 2014

Subject Code: 161002**Date: 21-05-2014****Subject Name: Audio Video Systems****Time: 10:30 am - 01:00 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) Mention atleast four types of microphones. Explain constructional details, working, characteristics and applications of condenser type microphone. **07**
- (b) Explain constructional details and principle of working of Moving coil type loud speaker. **07**
- Q.2** (a) Explain the principle of stereophonic system. **07**
- (b) With reference to audio amplifier explain the difference between voltage amplifier and power amplifier. Draw the circuit diagram of typical push-pull amplifier and explain its working. What are the advantages of a push-pull amplifier over a single transistor amplifier? **07**
- OR**
- (b) With reference to audio system explain the following terms. (Any Three) **07**
(1) PMPO (2) Reverberation (3) Directivity of a microphone (4) PA system.
- Q.3** (a) Explain the principle of magnetic recording and reproduction. What is biasing? Why AC biasing is preferred over DC biasing. **07**
- (b) What do you understand by the terms Positive modulation and Negative modulation? What are the merits and demerits of negative modulation? **07**
- OR**
- Q.3** (a) Write a detailed note on Crossover Network. **07**
- (b) Explain the need of frequency interleaving. How it is done? Why the frequency of colour sub carrier is chosen as the odd multiple of half-the-line frequency? **07**
- Q.4** (a) What is interlaced scanning? How it is done? What are its merits over simple (progressive) scanning? **07**
- (b) Give Reason. (1) Vertical sync pulse is serrated. (2) Pre and Post equalizing pulses are added in the composite video signal. **07**
- OR**
- Q.4** (a) Sketch the picture signal details of three scanning lines with different average brightness level and explain the following terms: (1) Peak white level (2) Black level (3) Blanking level (4) DC level (5) Pedestal height (6) sync pulse **07**
- (b) Draw and explain the constructional details of PIL type colour picture tube. What are its merits over the Delta gun type colour picture tube? **07**
- Q.5** (a) Sketch the 7 Mhz. bandwidth allotted to each channel. Why VSB type of transmission is chosen over DSB or SSB type? **07**
- (b) Explain the basics of Video Compression techniques. **07**
- OR**
- Q.5** (a) What are the features of SECAM colour system? Draw and explain the block diagram of SECAM III coder. What are the merits and demerits of SECAM system? **07**
- (b) Write a note on High Definition TV **07**
