

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – WINTER 2013****Subject Code: 161002****Date: 29-11-2013****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) Explain the construction and working of moving coil loud speaker. **07**
- (b) What is the difference between voltage amplifier and power amplifier ? Draw and explain the circuit diagram of class B push-pull amplifier. What are the advantages of push-pull amplifier over single ended amplifier? **07**
- Q.2** (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) Write a detailed note on cross-over network. **07**
- OR**
- (b) Explain the block diagram of a tape recorder. What is the need for biasing? What are the advantages of ac biasing over dc biasing? **07**
- Q.3** (a) What are the essential requirements for good PA installation? How can these be met in practice? **07**
- (b) Explain fully how a vidicon camera tube develops the video signal. Draw light transfer characteristic of such a tube and explain. What do you understand by the term Dark current? **07**
- OR**
- Q.3** (a) Explain the principle of stereophony. What is quadraphony system? **07**
- (b) Give Reason. (Any Two) **07**
- (1) In picture tube electro-magnetic rather than electro-static deflection is used.
- (2) Sync. Pulses are added at the top 25% of composite video signal.
- (3) Duration of V-sync pulses is kept very much different from that of H-sync pulses.
- Q.4** (a) Explain the principle of frequency interleaving. Why the color sub-carrier freq. is chosen as the odd multiple of $f_{h/2}$. **07**
- (b) Sketch VSB channel of 7Mhz. and show the position of various carriers. Why VSB rather than DSB or SSB not chosen for transmission? **07**
- OR**
- Q.4** (a) Explain the constructional features of Trinitron color picture tube. Compare it with those of PIL tube. **07**
- (b) What are the salient features of PAL system. Draw and explain the simplified block diagram of PAL encoder. **07**

Q.5 (a) With reference to color TV receiver explain the function of following circuits. **XD07**

(Any Two)

- (1) Color killer ckt.
- (2) Comb Filter.
- (3) Y channel delay line.

(b) Explain the basics of video compression Techniques. **07**

OR

Q.5 (a) What are the features of SECAM system? Draw and explain the block diagram of SECAM – III coder. **07**

(b) Write a note on any one of the following. **07**

- (1) HDTV
- (2) LCD TV receiver
