

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER– VI (OLD) EXAMINATION – WINTER 2021****Subject Code:161002****Date:04/12/2021****Subject Name:Audio - Video Systems****Time:10:30 AM TO 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.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Briefly explain following terms related to Audio Video Systems: **07**
- (i) Aspect Ratio
  - (ii) Brightness
  - (iii) Saturation
  - (iv) Luminance
  - (v) Line out
  - (vi) Aux. in
  - (vii) Phon
- (b) Sketch composite video signal waveform for at least three successive lines and indicate extreme white level, blanking level, pedestal height and sync pulse level on it with brief explanation. **07**
- Q.2** (a) Write short note on: Cable Television Network. **07**
- (b) What is meant by degaussing and why is it needed? Draw and explain automatic degaussing circuit for TV receiver. **07**
- OR**
- (b) Classify Power Amplifiers and explain Class-B Push-Pull Amplifier. **07**
- Q.3** (a) Draw block diagram of PA system and explain working of mixer circuit for PA system. **07**
- (b) Write functions of video IF amplifier and draw overall IF response curve of a TV receiver tuned to channel-3 (band-I). Show all frequencies on the curve. **07**
- OR**
- Q.3** (a) Explain working principle of loud speaker with necessary diagram. Discuss about different types of headphone. **07**
- (b) Draw the block diagram of PAL-D colour receiver. **07**
- Q.4** (a) What are the functions of a typical TV tuner? Draw and explain block diagram of VHF tuner. **07**

- (b) What is the working principle of microphone? List different types of microphones and write applications of each. **07**

**OR**

- Q.4 (a)** (i) Explain the basics of magnetic recording with necessary diagram. **07**  
(ii) Write short note on: stereophony and multichannel sound

- (b) What is interlaced scanning? How it is done? What are its merits over? simple (progressive) scanning? **07**

- Q.5 (a)** Explain how the luminance and color difference signals are developed from Camera outputs. Why is it necessary to set  $Y = 0.3R + 0.59G + 0.11B$ ? **07**

- (b) Discuss (i) Cross Over network (ii) Audio terminations **07**

**OR**

- Q.5 (a)** Compare LED TV, LCD TV & Plasma TV. **07**

- (b) List the types of Television systems and standard used worldwide and Explain it. **07**

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