

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM
IV B. Tech I Semester Advanced Supplementary Examinations March 2025

CONSUMER ELECTRONICS

(Open Elective)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**
All Questions Carry Equal Marks

UNIT-I

1. a) Compare and contrast the operational principles and performance characteristics of carbon, moving coil, and cordless microphones? [7M]
- b) Explain how Dolby technologies enhance audio processing. Give two examples of Dolby technologies and how they improve audio quality. [7M]

(OR)

2. a) Briefly define noise and two distinct types of distortion commonly found in audio systems. For each, describe the cause and the resulting effect on the audio signal? [7M]
- b) Explain the concept of fidelity in audio systems & mention the advantages of multi-speaker systems in achieving high-fidelity audio reproduction. [7M]

UNIT-II

3. a) Distinguish between Audio as a Signal and Audio as Data? [7M]
- b) Draw the block diagram of digital audio processing and explain the function of each block. [7M]

(OR)

4. a) What is the significance of time compression & time expansion in audio editing, production, and analysis? [7M]
- b) Analyze the advantages, disadvantages, inherent limitations, and practical applications of time compression and time expansion of audio signals? [7M]

UNIT-III

5. a) What does scanning mean in the context of television and video technology? What is the difference between interlaced and progressive scanning? [7M]
- b) What is the need for synchronizing and blanking pulses in television systems? [7M]

(OR)

6. a) How is colour mixing achieved in a TV display? [7M]
- b) Compare the television broadcast standards such as PAL, NTSC, and SECAM. [7M]

UNIT-IV

7. a) Explain the complete signal flow in a Digital Satellite Television system, from the uplink to the subscriber's television. [7M]
- b) Mention the details of key components at each stage of Digital Satellite Television system. [7M]

(OR)

8. a) Explain the basic working principle of a Liquid Crystal Display (LCD) television. Describe the function of each layer in the LCD panel? [7M]
- b) Compare and contrast LCD and LED televisions, considering factors like picture quality, energy efficiency, cost, and lifespan? [7M]

UNIT-V

9. a) Describe the process by which a vacuum cleaner removes dirt and debris from surfaces? [7M]
- b) Explain the electrophotographic process used in a Xerox machine to create copies of documents. [7M]

(OR)

10. a) Describe the operation of a food processor and its versatility in food preparation? [7M]
- b) Explain the operational principle of a microwave oven, including the generation and interaction of microwaves with food. [7M]
