

**Unit-I****Chapter 1 : Audio Fundamentals 1-1 to 1-24**

**Syllabus :** Basic characteristics of sound signal, Level and loudness, Pitch, Frequency response, Fidelity, Sensitivity and selectivity. Audio amplifiers : Mono, Stereo, Microphone : Working principle and characteristics, Types : Carbon, Condenser, Crystal, Electrets and tie clip, Speakers : Working principle and characteristics, Types : Electrostatic, Dynamic, Permanent magnet etc. Woofers, Tweeter and midrange, Wireless, Troubleshooting procedure.

1.1	Sound .....	1-1	1.5	Microphones .....	1-6
1.1.1	Propagation of Sound .....	1-1	1.5.1	Classification of Microphones .....	1-6
1.2	Basic Characteristics of Sound .....	1-1	1.5.2	Microphone Characteristics .....	1-7
1.2.1	Amplitude (a) and Loudness .....	1-2	1.5.3	Requirements of a Good Microphone ....	1-9
1.2.2	Period (T) .....	1-2	1.6	Types of Microphones .....	1-9
1.2.3	Frequency (n) .....	1-2	1.7	Carbon Microphone .....	1-9
1.2.4	Pitch .....	1-2	1.8	Dynamic Microphone (Moving Coil Microphone) .....	1-10
1.2.5	Wavelength ( $\lambda$ ) .....	1-2	1.9	Crystal Microphones .....	1-10
1.2.6	Velocity (v) .....	1-2	1.10	Condenser (or Capacitor) Microphone .....	1-11
1.2.7	Sensitivity of Human Ear for Sound .....	1-3	1.11	Electret Microphone .....	1-12
1.2.8	Selectivity .....	1-3	1.12	Special Microphones .....	1-13
1.2.9	Fidelity .....	1-3	1.12.1	Lavalier Microphone .....	1-13
1.2.10	Frequency Response .....	1-3	1.12.2	Tie-Clip Microphone .....	1-13
1.3	Important Features of Sound Waves .....	1-4	1.12.3	Cordless (Wireless) or Radio Microphone System .....	1-14
1.3.1	Sound Levels .....	1-4	1.12.4	Comparison of Microphones .....	1-15
1.3.2	Acoustic Power Measurement .....	1-4	1.13	Loudspeakers .....	1-15
1.4	Introduction to Amplifiers .....	1-4	1.13.1	Characteristics of Loudspeakers .....	1-15
1.4.1	Microphones .....	1-5	1.14	Moving Coil or Cone Type Loudspeaker .....	1-16
1.4.2	Loudspeakers .....	1-5	1.15	Electrodynamic Loudspeaker .....	1-17
1.4.3	Monophonic Amplifier .....	1-5	1.16	Horn Type Loudspeaker .....	1-17
1.4.4	Stereophonic Amplifier .....	1-5	1.17	Electrostatic (Condenser/Capacitor) Loudspeaker .....	1-18
1.4.5	Comparison of Stereo and Mono Amplifiers .....	1-6	1.17.1	Comparison of Loudspeakers .....	1-19
			1.18	Multispeaker System .....	1-20
			1.18.1	Woofers .....	1-20
			1.18.2	Midrange or Squawkers .....	1-20
			1.18.3	Tweeters .....	1-20
			1.18.4	Frequency Response .....	1-21
			1.18.5	Comparison of Woofer, Midrange Speaker and Tweeter .....	1-21



1.19	Trouble Shooting in Audio and Video Equipment .....	1-22
1.20	MSBTE Questions and Answers .....	1-23
1.21	I-Scheme Questions and Answers.....	1-24
	• <b>Review Questions</b> .....	<b>1-22</b>

**Unit-II**

**Chapter 2 : Audio Systems** **2-1 to 2-32**

**Syllabus** : Block diagram and operation of CD player, Types of CD player, Component used for CD mechanism : CD pick-up assembly, Gear system, Drive motors, CD lens, Block diagram of Hi-Fi amplifier and its working, Public Address (PA) system : Block diagram and operation, Speaker impedance matching and characteristics, Home theatre system, Troubleshooting procedure of audio systems, Block diagram and working of MP3.

2.1	Introduction.....	2-1
2.2	Compact Discs (CDs) .....	2-1
2.2.1	Compact Disk (CD) Technology .....	2-1
2.2.2	Principle of Optical Recording on Disc ...	2-2
2.2.3	Specifications of a CD .....	2-2
2.2.4	Playback Process .....	2-2
2.2.5	Advantages of CD .....	2-3
2.2.6	Disadvantages of CD .....	2-4
2.3	Different Types of CDs .....	2-4
2.3.1	Video Compact Disc (VCD) .....	2-4
2.3.2	Digital Video Disc (DVD) .....	2-4
2.3.3	Comparison of VCD, DVD .....	2-5
2.4	CD Player .....	2-6
2.4.1	Specifications of a CD Player .....	2-7
2.5	Components used for CD Mechanism .....	2-7
2.6	CD Pick-up Assembly .....	2-8
2.7	CD Lens .....	2-8
2.7.1	Collimation Lens .....	2-9
2.7.2	Concave Lens .....	2-9
2.7.3	Objective Lens .....	2-9
2.7.4	Cylindrical Lens .....	2-10
2.8	Drive Motors in CD Player .....	2-10
2.8.1	Tray or Loading Motor .....	2-10
2.8.2	Slide, Sled or Feed Motor .....	2-10
2.8.3	Spindle, Disc, Turntable Motor .....	2-11
2.9	Gear System .....	2-11
2.10	High Fidelity (Hi-Fi) Systems .....	2-11
2.10.1	Characteristics of Ideal High Fidelity Systems .....	2-11
2.10.2	Requirements of Hi-Fi Systems .....	2-12
2.10.3	Hi-Fi Stereo Reproduction System .....	2-12
2.10.4	Hi-Fi Stereo Controls .....	2-13
2.10.5	Audio Terminations .....	2-14
2.11	Tone Control Circuits .....	2-15
2.12	Graphic Equalizer .....	2-15
2.12.1	Circuit Diagram and Operation .....	2-16
2.13	Public Address (P.A.) Systems .....	2-17
2.13.1	Block Diagram of a P.A. System .....	2-17
2.13.2	Requirements of a Public Address System .....	2-18
2.14	Speaker Impedance Matching .....	2-20
2.14.1	Series / Parallel Connection of Speakers .....	2-20
2.14.2	Impedance Matching using Audio Transformers .....	2-21
2.15	A Home Theater .....	2-21
2.16	Troubleshooting Procedure of Audio Systems ...	2-22
2.16.1	Troubleshooting in a P.A. System .....	2-23
2.17	An Analog Audio .....	2-24
2.17.1	Digital Audio .....	2-24



2.17.2	Conversion Process .....	2-25	3.5	Principle of Colour TV .....	3-6
2.17.3	Audio Data Compression .....	2-25	3.6	Characteristics of the Human Eye .....	3-6
2.17.4	Block Diagram .....	2-26	3.6.1	Resolution .....	3-6
2.18	MPEG Audio Compression Format (MP3) .....	2-27	3.6.2	Aspect Ratio .....	3-7
2.18.1	Encoding and Decoding .....	2-27	3.7	Rectangular Scanning (Sequential Scanning) .....	3-7
2.18.2	Bit Rate .....	2-27	3.8	Persistence of Vision (Image Continuity) .....	3-8
2.19	MP3 Player .....	2-28	3.8.1	Flicker Problem .....	3-8
2.19.1	MP3 CD Recorder .....	2-28	3.8.2	Why is the Field Rate 50 or 60 Per Second ? .....	3-9
2.19.2	MP3 CD Player .....	2-29	3.9	Vertical Resolution .....	3-9
2.19.3	FLASH Memory MP3 Player .....	2-30	3.9.1	Kell Factor .....	3-10
2.20	MSBTE Questions and Answers .....	2-30	3.10	Horizontal Resolution and Video Bandwidth .....	3-10
2.21	I-Scheme Questions and Answers.....	2-32	3.11	Interlaced Scanning .....	3-11
	• <b>Review Questions</b> .....	<b>2-30</b>	3.11.1	Drawback of Sequential Scanning .....	3-11
			3.11.2	Interlaced Scanning .....	3-12
			3.11.3	Advantages of Interlaced Scanning .....	3-13
			3.11.4	Scanning Periods and Frequencies at a Glance .....	3-13
			3.11.5	Active Number of Lines .....	3-13
			3.11.6	Why is the Number of Lines Odd ? .....	3-14
			3.12	Composite Video Signal (CVS) .....	3-14
			3.13	TV Standards .....	3-14
			3.13.1	Lines and Scanning .....	3-14
			3.13.2	Horizontal Line Frequency .....	3-14
			3.14	Video Signal Components .....	3-15
			3.14.1	Horizontal Blanking Pulse .....	3-15
			3.14.2	Vertical Blanking .....	3-15
			3.14.3	Composite Video Signal (CVS) for Monochrome TV .....	3-15
			3.15	Horizontal Sync. and Blanking Standards .....	3-17
			3.15.1	Line (Horizontal) Period H .....	3-17
			3.15.2	Line (Horizontal) Blanking (LB) Period .....	3-17

### Unit-III

#### Chapter 3 : TV Fundamentals and Transmitter 3-1 to 3-45

**Syllabus** : Concept : Aspect ratio, image continuity, interlace scanning, scanning periods – horizontal and vertical, vertical and horizontal resolution. Vestigial sideband transmission, bandwidth for Colour signal, characteristics of colour signal compatibility. Colour theory, Grassman's law, additive and subtractive Colour mixing. Composite Video Signal - Pedestal height, Blanking pulse, Colour burst, Horizontal sync. pulse details, Vertical sync. pulse details, Equalizing pulses, CCIR B standards for Colour signal transmission and reception. Positive and negative modulation, Merits and demerits of negative modulation. Block diagram of colour TV transmitter, Troubleshooting procedure of colour TV transmitter.

3.1	Introduction to Television.....	3-1
3.2	The Scanning Process .....	3-2
3.3	Video Signal .....	3-3
3.4	Basic Monochrome TV System .....	3-3
3.4.1	Television Transmitter .....	3-4
3.4.2	Television Receiver .....	3-5



3.16	Vertical Sync. and Blanking Standards .....	3-18	3.24.10	The Luminance Signal (Y) .....	3-28
3.16.1	Vertical Blanking (VB) Period .....	3-18	3.24.11	The Chrominance Signals .....	3-28
3.16.2	Field Sync. Pulse .....	3-19	3.24.12	Why is (G-Y) Signal not Transmitted ? .....	3-29
3.17	Video Modulation and VSB Signal .....	3-19	3.25	Characteristics of Colour Signal .....	3-29
3.17.1	Positive Modulation .....	3-20	3.26	Colour TV Signal Transmission .....	3-30
3.17.2	Negative Modulation .....	3-20	3.26.1	Compatibility Considerations .....	3-30
3.17.3	Comparison between Positive and Negative Modulation .....	3-20	3.26.2	Conditions for Compatibility .....	3-31
3.18	Video Bandwidth .....	3-21	3.26.3	Chrominance Modulation .....	3-31
3.19	VSB Transmission Signal .....	3-21	3.26.4	Frequency Interleaving .....	3-31
3.19.1	Spectrum of Transmitted Monochrome TV Signal .....	3-21	3.26.5	Colour Burst Signal (CB) .....	3-32
3.19.2	Channel Bandwidth Calculation .....	3-22	3.27	Composite Video Signal (CVS) for Colour Transmission .....	3-33
3.19.3	Why is AM used for Picture ? .....	3-23	3.28	Generation of Luminance and Colour Difference Signals .....	3-33
3.20	Sound Modulation and Intercarrier System .....	3-23	3.29	Standard TV Channel Characteristics .....	3-34
3.20.1	Intercarrier System .....	3-23	3.29.1	CCIR-B Standards for Colour Signal Transmission and Reception .....	3-35
3.20.2	TV Broadcast Channels .....	3-23	3.29.2	TV Channel Allocation for Band I and III .....	3-36
3.21	CCIR-B Standards .....	3-24	3.30	TV Transmitter .....	3-36
3.22	Different TV Systems .....	3-24	3.30.1	Types of TV Transmitters .....	3-36
3.23	Colour Theory .....	3-24	3.30.2	High Level TV Transmitter .....	3-37
3.24	Mixing of Colours .....	3-25	3.30.3	Low Level (IF Modulated) TV Transmitter .....	3-38
3.24.1	Subtractive Mixing .....	3-25	3.30.4	The PAL System .....	3-39
3.24.2	Additive Mixing .....	3-25	3.31	Troubleshooting Procedure of Colour TV Transmitter .....	3-40
3.24.3	Comparison between Additive and Subtractive Mixing of Colours .....	3-26	3.32	MSBTE Questions and Answers .....	3-41
3.24.4	Colour Temperature .....	3-26	3.33	I-Scheme Questions and Answers .....	3-45
3.24.5	Primary Colours .....	3-27		• <b>Review Questions</b> .....	<b>3-40</b>
3.24.6	Secondary Colours .....	3-27			
3.24.7	Grassman's Law .....	3-27			
3.24.8	Colour TV Signals .....	3-28			
3.24.9	Colour Difference (V and U) and Luminance (Y) Signals .....	3-28			

**Unit-IV****Chapter 4 : Television Receivers 4-1 to 4-42**

**Syllabus** : Block diagram and operation of colour TV receiver, Operation of PAL-D decoder HDTV : Development of HDTV, NHK, MUSE system and NHK broadcast, LED/LCD technology, principle and working of LCD and LED TV., Direct to Home receiver (DTH), Concept, receiver block diagram, Indoor and outdoor unit Troubleshooting procedure of colour TV receiver system, Block diagram and working of OLED.

4.1	Introduction .....	4-1	4.7.3	Colour Signal Matrixing and Amplifiers .....	4-16
4.2	Basic Monochrome TV System .....	4-1	4.8	Power Supplies Used in TV Receiver .....	4-18
4.2.1	Monochrome Television Transmitter .....	4-2	4.8.1	How an EHT is Developed ? .....	4-19
4.2.2	Monochrome Television Receiver .....	4-2	4.9	CCIR-B Standards for Colour Signal Transmission and Reception .....	4-20
4.3	Colour TV Receiver .....	4-3	4.10	Digital TV (Development of HDTV) .....	4-21
4.4	Principle of Colour TV .....	4-6	4.10.1	Classification of DTV .....	4-21
4.4.1	Colour TV Signals .....	4-7	4.10.2	Comparison of SDTV, EDTV and HDTV .....	4-22
4.4.2	Colour Difference (V and U) and Luminance (Y) Signals .....	4-7	4.10.3	Digital TV Signals .....	4-22
4.4.3	The Luminance Signal (Y) .....	4-7	4.11	Introduction to HDTV .....	4-22
4.4.4	The Chrominance Signals .....	4-8	4.11.1	High Definition Television (HDTV) .....	4-23
4.4.5	Constant Luminance Principle .....	4-8	4.11.2	CCIR Definition of HDTV .....	4-23
4.4.6	Bandwidth of Chrominance Signal .....	4-8	4.11.3	HDTV System Considerations .....	4-23
4.4.7	Chrominance Bandwidth .....	4-8	4.11.4	HDTV Equipment .....	4-23
4.5	PAL System .....	4-9	4.11.5	HDTV Aspect Ratio .....	4-23
4.5.1	The PAL Decoder .....	4-9	4.12	HDTV Scanning .....	4-24
4.5.2	Advantages and Disadvantages of PAL System .....	4-10	4.12.1	Principle of Progressive Scanning .....	4-24
4.6	PAL-D Colour Receiver .....	4-11	4.12.2	HDTV Resolution .....	4-24
4.7	Various Circuits in Colour TV .....	4-14	4.12.3	Digital Compression .....	4-25
4.7.1	Colour Killer Circuit .....	4-14	4.12.4	Notations .....	4-25
4.7.2	Colour Killer Control .....	4-15	4.12.5	HDTV Colours .....	4-25
			4.12.6	HDTV Transmission Types .....	4-25
			4.13	HDTV Standards and Compatibility .....	4-26
			4.13.1	HDTV Standards .....	4-26
			4.13.2	Compatibility of HDTV .....	4-27
			4.14	HDTV Specifications .....	4-27
			4.14.1	Features of HDTV .....	4-27



4.14.2	Advantages of HDTV .....	4-28
4.15	NHK (Nippon Hoso Kyokoi) HDTV System .....	4-28
4.15.1	Technical Specifications .....	4-28
4.15.2	The MUSE System .....	4-29
4.16	Introduction to Display Devices .....	4-30
4.17	Liquid Crystals .....	4-30
4.17.1	Liquid Crystal Displays (LCDs) .....	4-31
4.17.2	Liquid Crystal TV Display .....	4-31
4.17.3	Advantages of LCD Displays .....	4-32
4.17.4	Disadvantages of LCD Displays .....	4-32
4.18	TFT - LCD Technology for Displays .....	4-33
4.18.1	TFT - LCD Television Display .....	4-33
4.18.2	Advantages of TFT (LCD-TFT) .....	4-34
4.18.3	Disadvantages of TFT .....	4-34
4.19	LED TV .....	4-34
4.19.1	Advantages of LED TV .....	4-34
4.19.2	Disadvantages .....	4-35
4.19.3	Comparison of LED and LCD Display Devices (TVs) .....	4-35
4.20	DTH (Direct to Home) System .....	4-35
4.20.1	Direct to Home TV Satellite (DTH) Receiver .....	4-36
4.20.2	Advantages / Features of DTH System .....	4-37
4.20.3	Disadvantages .....	4-37
4.20.4	Requirements of DTH System .....	4-38
4.21	Troubleshooting Procedure for a Colour TV .....	4-38
4.22	OLED .....	4-39
4.23	MSBTE Questions and Answers .....	4-41
4.24	I-Scheme Questions and Answers.....	4-42
	• <b>Review Questions.....</b>	<b>4-40</b>

**Unit-V****Chapter 5 : Consumer Electronic Applications****5-1 to 5-16**

**Syllabus** : Photocopier block diagram, Working Microwave oven : Types, Single chip controllers, Block diagram, Types and wiring and safety instructions, Electrical specifications.

Washing machine : Block diagram of washing machine, Electrical specifications, Types of washing machines :

Automatic, Semiautomatic, Digital camera and camcorder : Pick up devices, Picture processing and picture storage, Electrical specifications.

5.1	Introduction.....	5-1
5.2	A Photocopier .....	5-1
5.2.1	Block Diagram .....	5-1
5.3	Microwave Ovens .....	5-3
5.3.1	Block Diagram .....	5-3
5.3.2	Single Chip Controllers .....	5-4
5.3.3	Types of Microwave Ovens .....	5-5
5.3.4	Wiring Instructions .....	5-5
5.3.5	Safety Instructions .....	5-5
5.3.6	Specifications of a Microwave Oven .....	5-6
5.4	Washing Machine .....	5-6
5.4.1	Block Diagram .....	5-6
5.4.2	The Washing Cycle .....	5-6
5.4.3	Speed Control .....	5-6
5.4.4	Types of Washing Machines .....	5-7
5.4.5	Specifications of Washing Machines .....	5-8
5.5	Digital Camera (Digicam) .....	5-8
5.5.1	Pick up Devices .....	5-8
5.5.2	CCD : Picture Processing .....	5-8
5.5.3	CMOS Image Sensors : Picture Processing .....	5-10
5.5.4	Comparison of Pick up Devices .....	5-10
5.5.5	Resolution .....	5-10
5.5.6	Capturing Colour .....	5-11



5.5.7	Viewing the Captured Picture .....	5-11	5.6.3	Digital Video Formats .....	5-14
5.5.8	Image Storage .....	5-11	5.6.4	Sampling .....	5-14
5.5.9	Image Staring Capacity .....	5-11	5.6.5	Compression .....	5-14
5.5.10	Optical Zoom and Digital Zoom .....	5-12	5.6.6	Audio.....	5-14
5.5.11	Specifications of a Digicam .....	5-12	5.6.7	Error Correction.....	5-14
5.6	Digital Camcorders .....	5-12	5.6.8	Specifications of a Camcorder .....	5-14
5.6.1	Principle .....	5-13	5.7	I-Scheme Questions and Answers .....	5-15
5.6.2	Sensors (Pick up Devices) and Picture Processing .....	5-13		• <b>Review Questions</b> .....	<b>5-14</b>
				• <b>Appendix-A</b> .....	<b>A-1 to A-2</b>

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