

September 2021

CONSUMER ELECTRONICS*Time Allowed: 1.5 Hours**Full Marks: 70***Answer to Question No.1 is compulsory and Answer any two questions from the rest.**

1. A. Choose the correct answer from the given alternatives (any ten): 2x10
- i) The polar diagram of a true omnidirectional microphone is - (a) perfect circle, (b) figure-of-eight, (c) cardioid, (d) none of the above.
 - ii) A part of a moving coil driver that fastens the cone to the basket while allowing it to move is the: (a) Voice coil, (b) Pole piece, (c) Spider, (d) Former.
 - iii) Stereo: (a) increases the concert hall feeling considerably (b) decreases the concert hall feeling considerably (c) enhances the concert hall feeling (d) none of the above
 - iv) The midrange audio frequencies: (a) are halfway between the lowest and highest audible frequencies (b) represent sounds whose volume levels are not too loud or too soft (c) are above the treble range but below the bass range (d) are between approximately 0.2 and 2 kHz
 - v) The stereo effect is: (a) produced over a lesser area by the third speaker, (b) not produced by the third speaker, (c) produced over a greater area by the third speaker, (d) enhanced by the third speaker
 - vi) NTSC stands for: (a) National Television Systems Commission, (b) National Television Systems Committee (c) National Television Systems Council, (d) Nippon Television Systems Commission
 - vii) Compared to a monochrome CRT, the accelerating voltage on a color CRT is: (a) about the same, (b) much higher, (c) much lower, (d) color CRTs use magnetic acceleration.
 - viii) The function of the "color burst" is to: (a) detect the presence of a color video signal, (b) regenerate the color sub-carrier, (c) to synchronize the color demodulation line by line, (d) all of the above
 - ix) The smallest picture element is called a: (a) dot, (b) pic, (c) pixel, (d) none of the above
 - x) The process of copying files to a CD-ROM is known as: (a) Burning, (b) Zipping, (c) Digitizing, (d) Ripping
 - xi) In a CD player the speed of CD is: (a) Constant at 500 rpm, (b) constant at 200 rpm, (c) varies from 200 to 500 rpm, (d) none of the above
 - xii) Television has a lot of features in common with: (a) FM stereo, (b) Telephone service, (c) Motion picture, (d) Magazine
 - xiii) The aspect ratio HDTV is: (a) 4:3, (b) 18:5, (c) 14:8, (d) 16:9

- xiv) Microphones are electroacoustic transducers which convert -
 (a) acoustic energy to electrical energy, (b) electrical energy to acoustic energy
 (c) acoustic energy to mechanical energy, (d) mechanical energy to acoustic energy
- B. Answer the following questions (any five): 4x5
- i) What is Spider?
 - ii) Define Hue.
 - iii) Define link blanking period.
 - iv) Does the size of a microphone impact its frequency and dynamic range?
 - v) What is the rise time of a microphone?
 - vi) What is color triangle?
 - vii) Define aspect ratio.
 - viii) What do you mean by "Composite video signal"?
2. a) Why is the color burst signal transmitted after each scanning line and why PAL color burst is often called the swinging burst?
 b) What are the merits of using an RF amplifier before the frequency converter?
 c) What are the demerits of PAL systems? (5+3)+5+2
3. a) List the features of PAL color system.
 b) Name the essential parts of TV transmitter.
 c) Differentiate between a monochrome and color TV receiver. 6+3+6
4. a) What is the difference between NTSC, PAL and SECAM?
 b) List any three requirements to be satisfied for compatibility in television systems.
 c) Explain the receiver control for monochrome and colour televisions. 6+3+6
5. a) Explain in brief the block diagram of a monochrome TV receiver.
 b) What do you mean by compatibility? 10+5
6. a) Explain the working principle of DVD Player with suitable block diagram.
 b) Define: Scrambling. 10+5
7. Explain TV Remote control transmitter and Receiver with block diagram. 15
8. a) Explain working principle of CD recording and CD playing.
 b) Write short note on HDTV system. 10+5
9. a) Explain difference between Moving Coil Microphone and Moving Coil Loud-Speaker
 b) Write short note on Graphic Equalizer. 8+7
10. a) Write short note on Multi speaker system.
 b) Explain the working of Digital recording system. 7+8
11. a) Discuss the Principle of operation, construction of Capacitance Microphone.
 b) Write short note on Crossover Networks. 10+5
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