Consumer Electronics

Assignment - II

Submitted To:

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Assignment-II

Q) Write short note on HDTV, LED TV, LCD and plasma TV.

→ 1) HDTV:

Digital techniques developed in the recent past for processing television signals have lead to the development of High Definition Television (HDTV). It aims at:

(i) Improvement in both vertical and horizontal resolution of the reproduced picture by approximately 2:1 over existing standards.
(ii) much improved colour condition (reproduction).
(iii) higher aspect ratio of atleast 5:3 and
(iv) stereophonic sound.

Their implementation results in a picture quality as clear as obtained from 35mm cine films and sound as clear as from digital audio discs.

Development of HDTV: In this standard adopted include 1125 scanning lines perframe, 60 fields per sound, 2:1 interlace scan and an aspect ratio of 16:9. The 1:25 lines were chosen to get an approximate doubling of vertical resolution and to allow for a 9/5 and 15/7 down conversion to Europe's 625 line PAL standard and America's 525 line NTSC standard respectively.

2) LED TV:

While notable LED TV manufacturers include Panasonic, Sony, samsung, LG, and many more, Samsung new series and SONY's BRAVIA range are very popular. Samsung's P5000 (LED) TV is a low end mode without SMART TV and 30 features. It enables excellent picture quality. The high end Samsung LED TV have features like 3-D, full HD, high referesh make necessary for 3D viewing Smart TV, wifi connectivity and computer use capability. In such receivers there is provision to control the LED backlight level for brighter white and deeper blacks on the screen. Such TV also deliver 5.1 surround sound from any DTS encoded content

3) LCD TV:

LCD TV produce a black and coloured image by selectively filtering a white light. The light is typically provided by a series of cold cathode flourinescent lamps (CCFLs) at the back of the screen. Millions of individual LCD shutters arranged in a grid open and close to allow a metered amount of the white light through. Each shutter is pained with a coloured filter to remove all but the red, green and blue (R,G,B) portions of light from the original white source. Each shutter filter pair forms a single 'sub-pixel'. The sub-pixels are so small that when the display is viewed from even from the short distance the individual colours blend together to produce a single spot of colour (a pixel). The shade of colours is contol by changing relative intensity of the light passing through the sub-pixels. To produce a complete TV, the shutter assembly is combined with central electronics and backlight source.

4) Plasma TV:

The development of both plasma and LCD televisions began at almost the same time. The only major problem the plasma designers faced was screen "burn-in". Never sets are less susceptible to this because of improved technology and introduction of features like screen savers and pixel orbiting. In general, both plasma and LCD set produces good quality pictures but plasma produce higher level of brightness and contrast levels than the LCDs because the pixels of their screen structures are either 'ON' or 'OFF' at any given instance. Plasma has a life span of more than 20,000 hours of viewing which is nearly the same as of LCDs. Plasma are heavier. Samsung's 2013 high end plasma TV called F85 delivers much improved picture quality.