**Course: Computer Graphics**

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**ASSIGNMENT-1**

**How color is formed in a CRT monitor?**

**Ans**: CRTs are the type of displays or monitors which have a cathode tubes at their back and a fluorescent screen. Screen contains tiny dots of three primary colors; Green, yellow and blue. By combining the emitted light from the different phosphors, a range of colours can be generated. There are two popular approaches for producing color displays with a CRT are:

1.Beam Penetration Method

2.Shadow-Mask Method

Millions of tiny red, green, and blue phosphor dots that glow when struck by an electron beam that travels across the screen to create a visible image contains by A CRT monitor. The terms anode and cathode­ are used in electronics as synonyms for positive and negative terminals. CRT tubes have a fair amount of glass but it's hard to recycle because of the phosphors. There are trace amounts of rare metals in the circuitry but also somewhat difficult to recycle. Bottom line is that there is little value in CRT monitors.

The Beam-penetration method for displaying colour pictures has been used with random-scan monitors. Two layers of phosphor, usually red and green, are coated onto the inside of the CRT screen, and the displayed colour depends on how far the electron beam penetrates into the phosphor layers.

A shadow-mask CRT has three phosphor colour dots at each pixel position. One phosphor dot emits a red light, another emits a green light, and the third emits a blue light. This type of CRT has three electron guns, one for each colour dot, and a shadow-mask grid just behind the phosphor-coated screen.

A cathode ray tube (CRT) is a specialized vacuum tube in which images are produced when an electron beam strikes a phosphorescent surface.It modulates, accelerates, and deflects electron beam(s) onto the screen to create the images.

The deflection system of the CRT operates on all 3 electron beams simultaneously; the 3 electron beams are deflected and focused as a group onto the shadow mask, which contains a sequence of holes aligned with the phosphor- dot patterns.

When the three beams pass through a hole in the shadow mask, they activate a dotted triangle, which occurs as a small color spot on the screen.

The phosphor dots in the triangles are organized so that each electron beam can activate only its corresponding color dot when it passes through the shadow mask. Another configuration for the 3 electron guns is an Inline arrangement in which the 3 electron guns and the corresponding red-green-blue color dots on the screen, are aligned along one scan line rather of in a triangular pattern. This inline arrangement of electron guns in easier to keep in alignment and is commonly used in high-resolution color CRT's. Most desktop computer displays make use of CRT for image displaying purposes.