

**Que)** Describe the use of all the color models used while designing an artifact in Graphics Tools like GIMP.

**Ans)** Color plays a vital role in design and everyday life. It can draw the eye towards an image, evoke a certain mood or emotion. These color schemes can be used to communicate some important information using color theory eg traffic lights use color instead of textual information to display certain information. These color models are basically divided into two types Additive Color Model & Subtractive Color Model

Color models are also called color spaces. It is a language used to express what a color actually really seems to the human eye. Most of these languages are numerical in nature. The most dominant of these models are as follows:

\*) **RGB**: It is the most common model that is used to show colors by providing three numbers indicating the levels of red, green and blue. This model follows the additive color model. This means the more primary you add, the result will be more brighter. It directly corresponds to how devices display color. This is most commonly used in cathode ray tubes, LCD's, LED's and digital photography. The reason RGB is used in these devices is because of the Tristimulus theory. This model shows that our eyes are more sensitive to red, green and blue light. So this is tailored to how our eyes work.

Today with 24-bit displays this model allows to display almost 216 combinations of colors.

\*) **HSV**: It stands for Hue, Saturation and Value. This model is also linked to very similarly named models like **HSB(Hue Saturation & Brightness)/HSL(Hue, Saturation & Lightness)**. This color model is designed with artists in mind and is the most intuitive ways of thinking about color. In HSV we first have the hue this decides us which color to choose from. Saturation determines how concentrated the color will be and value determines its brightness. This allows to adjust the color of an image without touching the brightness of the image using the saturation. This is not possible in RGB.

**HSL**: If we bring the lightness to minimum then color we achieve is black regardless of what hue or saturation is being picked. At lightness of 1.0(max) the color we achieve is pure white.

HSV: at the value zero we get a black color and at value 1 we get the color itself.

\*) **YUV**: This is a family of similar color models like **Y'CbCr, YpbPr** etc. These are grouped together because they split away the color information from the brightness information. Y'CbCr is the encoding scheme used for JPEG images and movie file formats. The Y channel captures the illuminance of the image. So it captures the brightness information of every channel in the image. The remaining two channels are only used to capture the color saturation. So this is very easily

processed by the algorithms. They create a chroma channels and throws away some information in those channels. The idea behind this is that human eye cannot see the color detail as well as the brightness details. In rgb this is very difficult since these information are not separated.

\*) **CMYK**: Color here is represented in 4 different channels. This is a subtractive color model used for mainly printing. The channels are Cyan, Magenta, Yellow and Key(Black). It is a subtractive color model. Primarily used in printing. This is done by masking different colors on white background. Since white color is a mixture of many colors this model is called subtractive because it subtracts brightness from a white background from four colors: cyan, magenta, yellow and black.

\*) **Bitmap**: Bitmap is called pixmap is memory organization in a file format used to store digital images. The term means 'map of bits'. This term implies bits per pixel. Every bit of the computer screen acts as a memory unit for different colors. Each pixel memory is associated to different colors. This is thus different to vector image.

\*) **Halftone**: It is used in reprographic technique. It creates an illusion of different color shades of same color tone and smoothness through use of dots which either vary in shape, size spacing. It is represented by the number of lines per inch. This refers to the number of lines of dots in one inch.

\*) Other color schemes are **CcMmYk** which is a 6 channel color model that is used in more serious printing for better color reproduction. This is also called the hexachrome technique. **RG** is another color model that was used when the image was shifted from monochrome images. They have only two channels because blue does not have a great visual impact. **Vector** is another color scheme in which the images created are through mathematical algorithms and thus do not disrupt upon zooming the image. The lines are smooth unlike the Bitmap.

**Que)** Explain the usage of typography in expressing any information through text media.

**Ans)** It is visual arrangement of design letter of type in physical space. This is the style or appearance of text. There is a difference between typeface and font. A typeface is a series of letters that are designed to belong together eg Bodoni. While Bodoni Bold Italic is a font which has specific group of letters within a typeface. So fonts make up typefaces in the same way chapters make up a book. All typeface make up a letter forms. Letter form is the individual design of any one letter. There are different type of typefaces. Usage of typography is widely popular amongst graphic designers and artists that love to explore interaction between the look of type of the text. There are different type of type faces. These include.

-> **Serif:** These contain strokes called serifs attached to the main part of the letter. Since they have a classic look they are more common in formal works like the print publications, magazines and news papers.

> **Sans-serif:** These do not contain that extra stroke. Hence the name which is name for without serif. It is considered more stylish and modern wrt serif font. Also it tends to read easier on computer screens. Thus they are used in smartphones and tablets.

-> **Display:** These typefaces come in many different styles like script, blackletter, all caps and fancy. Since they have a decorative nature they are best for small amount of text like titles, headers and more graphic heavy designs.

Typefaces and fonts have their own language. They can come across as casual, neutral, exotic or graphic. So the font used in your message should be chosen according to that message. There are different techniques used when we use fonts to make them work in our favour such as **Leading:** This is the space between the lines of text also known as line spacing. The goal is to make the text as comfortable to read as possible. **Tracking:** It is the overall space between characters. Sometimes called character spacing. **Hierarchy:** This is used to guide the readers eye to the most important concept. It shows them where to begin and where to go next using different level of emphasis. Establishing hierarchy is simple after you decide which element you want the reader to notice first and then make them stand out by usually making the larger, bolder or different in some way. **Kerning:** It is the space between specific characters. Unlike character it varies over the course of the word, because each letter fits differently in a typeface. Well crafted text can be the difference between an ordinary project and an extraordinary project.

**Q)** Elucidate all the steps used while modeling any character using animation tools like Blender.

**A)** Modeling the character using Blender has the following steps:

- 1) Select individual images for the front and the back view of the character.
  - 2) Import the images into blender.
  - 3) Select the side view in the right orthographic camera.
  - 4) Create a new screen layout and split the screen in such a manner that one screen has the front view and one has the side view.
  - 5) Change opacity to desired value.
  - 6) Select the view which you want to edit( eg. Front view)
  - 7) Go to edit mode(tab) and hit loop cut (ctrl+r) and select the mesh mode after the plane is divided into two halves : This enables plane to be mirrored so that the changes made in one plane lobe is reflected to the other. This step is optional but saves a lot of time.
  - 8) Now extrude the edit plane throughout the character to create a edge flow to mirror the structure of the desired body part of the character.
  - 9) Perform similar step on the back and the side view of the character image.
  - 10) Pull the points forward and backwards in the Y axis so as to get the curvature of the object and the roundness.
  - 11) Scale the edges according to the desired value such that the side and front view match.
  - 12) Use the proportional editing tool to change the breadth of the model using point pulling technique.
  - 13) To make the internal flattening of the object use extruding and point pulling the image towards the inside of the image.
- \*)Note: To further make the character as lively as possible UV mapping and then texturing and coloring is done on the UV map to make the image more realistic. This process is out of the scope of the question as only modeling is asked which can be done through above procedure.

**Que)** Mention all the points while designing a logo of a company and its usage at various places as different forms of images in any Mobile App as well as a Web Page for maximum impact over the users/ viewers.

**Ans)** Logo has a major affect on how consumers perceive the product.

1) Choosing a logo that matches product and industry.

- \*) Wordmark: Here the name of the company is the actual logo. Eg yahoo, google, Visa. This is mostly used if you want the people who do business with you to constantly read the name of your company until established.

- \*) Pictorial: Here the logo is represented by a picture. Eg hp, target, twitter, apple.

- \*) Abstract: Eg. Sprint, Pepsi, Nike, Playboy. These are generally unique logos.

- \*) Mascot: If the audience is younger mascot is considered as a good logo. Eg KFC, Kool aid, Planter's peanut.

2) Color Scheme of the logo: The logo should be according to the aura that company wants too bring into the market. Also never use too many colors. Keep the logo minimalistic. Every color has different meaning to them as per physoclogy concerns:

- \*) Red-- Fire/Emotional

- \*) Blue-- Stability/Confidence

- \*) Yellow-- Energy/Fresh

- \*) Green-- Trust/Calm

- \*) Purple-- Royalty/Power

- \*) Orange-- Happiness/Creative

- \*) Black-- Bold/Serious

- \*) Pink-- Warmth/love

- \*) Brown-- Nature/Reliable

3) Purpose of the logo: Where is the logo made to be relected on eg billboards, magazine, website etc. Is the logo being designed for a new company or a older comapny's side project.

4) How unique the logo is: When the logo is taken from a clipart, altering another pre-existing logo this does not potray the real image of the company's intention. So the best idea is to start from scratch.

5) Define your brand identity: The logo should communicate your brand's personality. This can only be done if you have fine idea of what the company actually stands for in terms of its core values.

6) Ensure that logo is memorable: This means that logo should be designed with respect to the targeted customer's mindset. So logo needs to stand out at the same time should not be very complicated.

7) Check out the competition: We should see what works well with your audience and what you should avoid. Thus this will help you to be sure to set ourselves apart from our competition.

8) Choosing different design aesthetics: There are different design styles like:

- \*) Classic: This aesthetic keeps it simple and doesn't venture out into crazy color palettes, graphics or fonts. A classic style tells people that you are reliable and down to earth.

- \*) Vintage: A vintage logo tells customers that history is important to you and that whatever you sell is done right.

- \*) Minimalistic: Brands often choose a clean and minimalist style to communicate how fresh and modern they are.

- \*) Fun: This is a popular choice for brands with a young (or young at heart) target customer.

- \*) Handcrafted: Handcrafted style transports a clear message: this brand is individualistic and stands for handmade quality.

9) Choosing the correct typography: There are different types of type faces. These include.

- > Serif: These contain strokes called serifs attached to the main part of the letter. Since they have a classic look they are more common in formal works like the print publications, magazines and news papers.

- > Sans-serif: These do not contain that extra stroke. Hence the name which is name for without serif. It is considered more stylish and modern wrt serif font. Also it tends to read easier on computer screens. Thus they are used in smartphones and tablets.

-> Display: These typefaces come in many different styles like script, blackletter, all caps and fancy. Since they have a decorative nature they are best for small amount of text like titles, headers and more graphic heavy designs.

10) Different ways of taking aspirations for your designs: This can be done by :

- \*) Taking idea from friends and relatives.
- \*) Brainstorming this is a group creativity technique by which efforts are made to find a conclusion for a specific problem by gathering a list of ideas spontaneously contributed by its members.
- \*) Asking the audience by filling forms and through other techniques.
- \*) Making a mood board: A mood board may be the perfect tool for to stimulate your creativity. This is an actual board by cutting out and pinning printed images or make a digital one. mood board will reflect what style and design features we are gravitating towards.