**Computer graphics** is a sub-field of [computer science](https://en.wikipedia.org/wiki/Computer_science) which studies methods for digitally synthesizing and manipulating visual content. Although the term often refers to the study of [three-dimensional computer graphics](https://en.wikipedia.org/wiki/3D_computer_graphics), it also encompasses [two-dimensional graphics](https://en.wikipedia.org/wiki/2D_computer_graphics) and [image processing](https://en.wikipedia.org/wiki/Image_processing).

# **Computer Graphics Tutorial**

It is difficult to display an image of any size on the computer screen. This method is simplified by using Computer graphics. Graphics on the computer are produced by using various algorithms and techniques. This tutorial describes how a rich visual experience is provided to the user by explaining how all these processed by the computer.

## Introduction of Computer Graphics

Computer Graphics involves technology to access. The Process transforms and presents information in a visual form. The role of computer graphics insensible. In today life, computer graphics has now become a common element in user interfaces, T.V. commercial motion pictures.

Computer Graphics is the creation of pictures with the help of a computer. The end product of the computer graphics is a picture it may be a business graph, drawing, and engineering.

In computer graphics, two or three-dimensional pictures can be created that are used for research. Many hardware devices algorithm has been developing for improving the speed of picture generation with the passes of time. It includes the creation storage of models and image of objects. These models for various fields like engineering, mathematical and so on.

Today computer graphics is entirely different from the earlier one. It is not possible. It is an interactive user can control the structure of an object of various input devices.

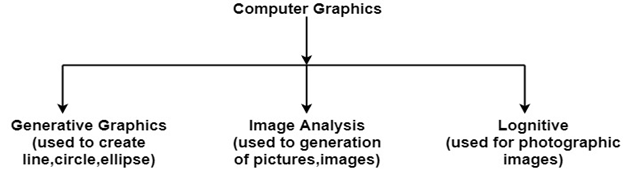
## Definition of Computer Graphics:

It is the use of computers to create and manipulate pictures on a display device. It comprises of software techniques to create, store, modify, represents pictures.

## Why computer graphics used?

Suppose a shoe manufacturing company want to show the sale of shoes for five years. For this vast amount of information is to store. So a lot of time and memory will be needed. This method will be tough to understand by a common man. In this situation graphics is a better alternative. Graphics tools are charts and graphs. Using graphs, data can be represented in pictorial form. A picture can be understood easily just with a single look.

Interactive computer graphics work using the concept of two-way communication between computer users. The computer will receive signals from the input device, and the picture is modified accordingly. Picture will be changed quickly when we apply command.



Applications of Computer Graphics

[Computer graphics](https://www.geeksforgeeks.org/computer-graphics-2/) deals with creation, manipulation and storage of different type of images and objects.

Some of the applications of computer graphics are:

1. **Computer Art:**  
   Using computer graphics we can create fine and commercial art which include animation packages, paint packages. These packages provide facilities for designing object shapes and specifying object motion.Cartoon drawing, paintings, logo design can also be done.
2. **Computer Aided Drawing:**  
   Designing of buildings, automobile, aircraft is done with the help of computer aided drawing, this helps in providing minute details to the drawing and producing more accurate and sharp drawings with better specifications.
3. **Presentation Graphics:**  
   For the preparation of reports or summarising the financial, statistical, mathematical, scientific, economic data for research reports, managerial reports, moreover creation of bar graphs, pie charts, time chart, can be done using the tools present in computer graphics.
4. **Entertainment:**  
   Computer graphics finds a major part of its utility in the movie industry and game industry. Used for creating motion pictures , music video, television shows, cartoon animation films. In the game industry where focus and interactivity are the key players, computer graphics helps in providing such features in the efficient way.
5. **Education:**  
   Computer generated models are extremely useful for teaching huge number of concepts and fundamentals in an easy to understand and learn manner. Using computer graphics many educational models can be created through which more interest can be generated among the students regarding the subject.
6. **Training:**  
   Specialised system for training like simulators can be used for training the candidates in a way that can be grasped in a short span of time with better understanding. Creation of training modules using computer graphics is simple and very useful.
7. **Visualisation:**  
   Today the need of visualise things have increased drastically, the need of visualisation can be seen in many advance technologies , data visualisation helps in finding insights of the data , to check and study the behaviour of processes around us we need appropriate visualisation which can be achieved through proper usage of computer graphics
8. **Image Processing:**  
   Various kinds of photographs or images require editing in order to be used in different places. Processing of existing images into refined ones for better interpretation is one of the many applications of computer graphics.
9. **Machine Drawing:**  
   Computer graphics is very frequently used for designing, modifying and creation of various parts of machine and the whole machine itself, the main reason behind using computer graphics for this purpose is the precision and clarity we get from such drawing is ultimate and extremely desired for the safe manufacturing of machine using these drawings.
10. **Graphical User Interface:**  
    The use of pictures, images, icons, pop-up menus, graphical objects helps in creating a user friendly environment where working is easy and pleasant, using computer graphics we can create such an atmosphere where everything can be automated and anyone can get the desired action performed in an easy fashion.

These are some of the applications of computer graphics due to which it’s popularity has increased to a huge extend and will keep on increasing with the progress in technology.

Basics and Types of Computer Graphics

Computer Graphics are visual representations of data displayed on a computer monitor. It can be a series of images called video or a single image. Computer graphics are very useful. They are used for movie making, video making, computer program and web development, scientific modeling, and commercial art.

Computer graphics can be 2D or 3D. They are made differently and used differently. People use different computer software’s to make different kinds of graphics.

2D graphics

2D graphics are usually split into two categories. Vector graphics and raster graphics.

Vector Graphics

Vector graphics uses geometrical objects, like points, lines, curves, and polygons, to create a complex image.  Vector graphics are made with programs like Adobe illustrator and inks cape and were used for some older computer games. Today, these software’s are often used for when computer graphics have to be printed out.

Raster Graphics

Raster graphics us pixels to make up larger image, it does not mean that the artist has to change a pixel at a time-taster programs often have tools like paintbrushes, eraser, and paint buckets to make a picture. Programs used to make these include Adobe Photoshop and coral paint shop pro. Images that are difficult to make, often made in the form of a raster image.

Pixel

Everyday most of us look at pixels in different amounts and sizes-on our phones, computers, TVs. This bunch of ones and zeroes are turned into millions of bright dots in a variety of brilliant colors. On the monitor of computer, a pixel is usually a square. Every pixel has color and all the pixels together are the picture.

The quantity of pixels determines the resolution of the picture. Typical resolutions range from 320 multiply by 200 multiply by 2000 multiply by 1500. For a simple image, a number describes the intensity of each pixel. It can be expressed between black and white. However, for internal binary representation reasons, it is usually stored as an integer between 0 (black) and 225 (white). So, the very first step to get a pixel to light up in the desired color. Each pixel is actual three single-color pixels in red, green and blue. The combinations of these three colors allow us to create the entire variety of the color spectrum that we need to draw graphics. Ass the basis for all this, we are using a bunch of zeroes and ones.

Now we know that we will have to write into memory to get pixels onto screen. See the pictures above to understand how we get a rasterized version of the line that can be expressed as pixel from points. Ones we are having this implemented, we are capable a triangle- and triangles are useful, because they can be used approximate all other shapes.

Filling the Blanks

Drawing lines is bit limiting, so it would be nice to fill in pixels between lines delimiting a shape. The algorithm took 6 steps with 4 operations (comparing the color of the four neighbors) fill a total of 9 pixels. This is not very effective and can be improved by using another algorithm, such as scan line fill.

3D graphics

3d graphics are graphics that look like images because they are three-dimensional. This means the computer thinks it has a height, a length, and depth, and displays them as this.

Website 1

Computer Graphics Solved MCQs Questions Answers

1.  GUI stands for

a) Graphical user interaction

b) Graphical uniform interchange

c) Graphics  user interface

d) None of these

**Answer - Click Here:**

**C**

2. The basic input device in GUI is

a) keyboard

b) monitor

c) mouse

d) all of these

**Answer - Click Here:**

**C**

3. Geometric transformation include

a) transition

b)  drawing

c)  scaling

d) none of the above

**Answer - Click Here:**

**C**

4.  DVST stands for …

a) Direct Visual Storage Tube

b) Digital View Storing Table

c) Direct View Storage Tube

d) Digital View Storage Tube

**Answer - Click Here:**

**C**

5. The term ‘raster’ is used for …

a) array

b) queue

c) model

d) matrix

**Answer - Click Here:**

**D**

6. Graphics is defined as …

a) photographs

b) simulations

c)  drawing

d) all of these

**Answer - Click Here:**

**D**

7.  What is the purpose of display card?

a) sending graphics data to output unit

b) receiving graphics data to input unit

c) sending graphics data from output unit

d) all of these

**Answer - Click Here:**

**A**

8. Sutherland Hodgeman algorithm is applied on …

a) line segment

b) concave polygon

c) smooth curves

d) convex polygon

**Answer - Click Here:**

**D**

9. Pixels are arranged in

a) three dimensinal grid

b) two dimensional grid

c) one dimensinal grid

d) none of these

**Answer - Click Here:**

**B**

10. Which controller is used to read each succesive byte of data from  frame buffer?

a) data controller

b) display controller

c) digital controller

d) design controller

**Answer - Click Here:**

**C**

11. Each pixel’s brightness is …

a) transitive

b) compatible

c) incompatible

d) none of these

**Answer - Click Here:**

**C**

12. RGB models are used for

a) printing

b) texting

c) computer display

d) window display

**Answer - Click Here:**

**C**

## Computer Graphics Test and Quiz

**1.  Raster images are also commonly known as …**

a) box map

b) pixmap

c) bitmap

d) none of these

**Answer - Click Here:**

**C**

**2. Distance from one pixel to the next pixel is named as …**

a) opacity

b) resolution

c) persistence

d) all of these

**Answer - Click Here:**

**B**

**3. Which algorithm is the simplest algorithm?**

a) buffer algorithm

b) [banker’s algorithm](https://t4tutorials.com/bankers-algorithm-in-operating-system-os/)

c) weighted algorithm

d) all of these

**Answer - Click Here:**

**A**

**4. Interactive**[computer graphics](https://t4tutorials.com/computer-graphics-mcqs/)**have \_\_\_\_\_\_ components.**

a) 1

b) 2

c) 3

d) 4

**Answer - Click Here:**

**C**

**5. To enable to take computer data we use which  projector?**

a) dimensional projector

b)  trijack mounted projector

c) roof mounted projector

d) none of these

**Answer - Click Here:**

**C**

**6.  The most basic geometric transformations include …**

a) translation

b) rotation

c) scaling

d) all of these

**Answer - Click Here:**

**D**

**7. The intersection of three primary RGB color will produce …**

a) green color

b) blue color

c) maroon color

d) white color

**Answer - Click Here:**

**D**

**8. Graphics having only few limited features is called as …**

a) grayscale graphics

b) active graphics

c) passive image

d) none of these

**Answer - Click Here:**

**C**

**9. The second grid in DUST is know as …**

a) storage mesh

b) phosphor

c) collectorss

d) none of these

**Answer - Click Here:**

**C**

10. Raster scan system use …..

a) absolute mask method

b) tree mask method

c) shadow mask method

d) none of these

**Answer - Click Here:**

**C**

11. The hardware devices contain ….

a) plotters

b) speakers

c) scanners

d) nonne of these

**Answer - Click Here:**

**A**

**12.  Which of the following is the example of impact devices?**

a) Electrostatic printer,Line printer

b) Inkjet printer,Laser printer

c) Line printer, chain printer

d) none of these

**Answer - Click Here:**

**C**

For black and white images, black pixels are identified by \_\_\_\_\_\_\_\_ in  
the frame buffer and white pixels represented by?  
(A) One and Zero  
(B) Zero and One  
(C) Both a & b  
(D) None of these

Answer: (A) One and ZeroB

Select the byte for 16\*16 array of black and white pixels ?  
(A) 64 bytes  
(B) 128 bytes  
(C) 32 bytes  
(D) 96 bytes

Answer: (C) 32 bytes

The display controller change 0s and 1s into?  
(A) TV monitor  
(B) Electronics signal  
(C) Video signal  
(D) None of these

Answer:(C) Video signal

Select the way in which The image can be transmitted to the display?  
(B) Point  
(C) Segment  
(D) None of these

Answer: (B) Point

which area of computer that is selected by an application is known as  
(A) Display  
(B) View port  
(C) Window  
(D) None of these

Answer: (C) Window

The movement of various attributes of image would make the image dynamic  
and like a dynamic effect is also known as?  
(A) Picture  
(B) Painting  
(C) Animation  
(D) None of these

Answer: (C) Animation

Website 2

1) GUI stands for -

1. Graphics uniform interaction
2. Graphical user interaction
3. Graphical user interface
4. None of the above

Hide Answer Workspace

**Answer:** (c) Graphical user interface

**Explanation:** GUI is an acronym of Graphical User Interface. It refers to an interface that allows one to interact with electronic devices like computers and tablets through graphic elements.

2) Graphics can be -

1. Simulation
2. Drawing
3. Movies, photographs
4. All of the above

Hide Answer Workspace

**Answer:** (d) All of the above

**Explanation:** Computer Graphics is the creation of pictures with the help of a computer. The end product of the computer graphics is a picture; it may be a business graph, drawing, and engineering. In computer graphics, two or three-dimensional pictures can be created that are used for research.

3) CAD stands for -

1. Computer art design
2. Computer-aided design
3. Car art design
4. None of the above

Hide Answer Workspace

**Answer:** (b) Computer-aided design

**Explanation:** CAD is software used by engineers, architects, artists, drafters to make a technical illustration in two-dimensional (2D) and three-dimensional (3D). It is a combination of hardware and software that makes engineers designs everything.

4) The components of Interactive computer graphics are -

1. A monitor
2. Display controller
3. Frame buffer
4. All of the above

Hide Answer Workspace

**Answer:** (d) All of the above

**Explanation:** Interactive computer graphics consists of three components that are:

* Frame Buffer or Digital Memory
* A Monitor likes a home T.V. set without the tuning and receiving electronics.
* Display Controller or Video Controller: It passes the contents of the frame buffer to the monitor.

5) A user can make any change in the image using -

1. Interactive computer graphics
2. Non-Interactive computer graphics
3. Both (a) & (b)
4. None of the above

Hide Answer Workspace

**Answer:** (a) Interactive computer graphics

**Explanation:** In interactive Computer Graphics, the user has some control over the picture, i.e., the user can make any change in the produced image. One example of it is the ping-pong game.

6) What is a pixel mask?

1. a string containing only 0's
2. a string containing only 1's
3. a string containing two 0's
4. a string containing both 1's and 0's

Hide Answer Workspace

**Answer:** (d) string containing both 1's and 0's

**Explanation:** The pixel mask is a string that contains the digits 1's and 0's to represent the positions to plot along the line path.

7) The higher number of pixels gives us a \_\_\_\_ image -

1. Better
2. Worst
3. Smaller
4. None of the above

Hide Answer Workspace

**Answer:** (a) Better

**Explanation:** More number of pixels makes a better resolution of an image.

A digital camera uses pixel elements (also known as a pixel) to capture images.

8) Which one of the following is the primarily used output device?

1. Video monitor
2. Scanner
3. Speaker
4. Printer

Hide Answer Workspace

**Answer:** (a) Video monitor

**Explanation:** The video monitor is a widely used output device.

9) Which one of the following terms is used for the area of the computer captured by an application?

1. Display
2. Window
3. Viewport
4. None of the above

Hide Answer Workspace

**Answer:** (c) Viewport

**Explanation:** The display method of the part selected or the design in which the selected element is viewed is called a viewport. An area on the display device to which a window is mapped is known as a viewport.

10) Aspect Ratio can be defined as -

1. The ratio of the vertical points to horizontal points
2. of pixels
3. Both (a) & (b)
4. None of the above

Hide Answer Workspace

**Answer:** (a) Ratio of the vertical points to horizontal points

**Explanation:** Aspect ratio is the ratio of the vertical points to horizontal points essential to produce equivalent length lines in both directions on the screen.

11) Which of the following is not the pattern of line?

1. Dotted line
2. Dashed line
3. Dark line
4. All of the above

Hide Answer Workspace

**Answer:** (c) Dark line

**Explanation:** Dark line is not the pattern of the line.

12) DDA stands for -

1. Direct differential analyzer
2. Data differential analyzer
3. Direct difference analyzer
4. Digital differential analyzer

Hide Answer Workspace

**Answer:** (d) Digital differential analyzer

**Explanation:** DDA is an acronym of Digital Differential Analyzer. It is an incremental method of scan conversion of lines.

13) From the given list of options, which one is the accurate and efficient line-generating algorithm?

1. Midpoint algorithm
2. DDA algorithm
3. Bresenham's Line algorithm
4. None of the above

Hide Answer Workspace

**Answer:** (c) Bresenham's Line algorithm

**Explanation:** Bresenham's line algorithm is an efficient method because it involves only integer addition, subtractions, and multiplication operations. These operations can be performed very rapidly, so lines can be generated quickly.

14) The process of positioning an object along a straight line path from one coordinate point to another is called -

1. Translation
2. Reflection
3. Shearing
4. Transformation

Hide Answer Workspace

**Answer:** (a) Translation

**Explanation:** A translation is used to an object by repositioning it along a straight line path from one co-ordinate point to another.

15) Which of the following equation is used in 2D translation to move a point(x,y) to the new point (x',y')?

1. x' = x + ty and y' = y + tx
2. x' = x - tx and y' = y - ty
3. x' = x + tx and y' = y + ty
4. x' = x + tx and y' = y - ty

Hide Answer Workspace

**Answer:** (c) x' = x + tx and y' = y + ty

**Explanation:** We translate a 2-D point by adding translation distance, tx, and ty, to the original coordinates position (x,y) to move the points to a new position (x', y').

x' = x + tx

y' = y + ty.

16) The process of repositioning an object along a circular path is called -

1. Translation
2. Rotation
3. Scaling
4. None of the above

Hide Answer Workspace

**Answer:** (b) Rotation

**Explanation:** Rotation is a process of changing the angle of the object. Rotation can be clockwise or anticlockwise.

17) Which of the following is must be specified to generate a rotation?

1. Rotational distance
2. Rotation angle
3. Co-ordinates
4. None of the above

Hide Answer Workspace

**Answer:** (b) Rotation angle

**Explanation:** For rotation, we have to specify the angle of rotation and rotation point. The rotation point is also known as pivot point.

18) A positive value of the rotation angle -

1. rotates an object in the clockwise direction
2. rotates an object in the counter-clockwise direction
3. Both of the above
4. None of the above

Hide Answer Workspace

**Answer:** (b) rotates an object in the counter-clockwise direction.

**Explanation:** The positive value of the pivot point (rotation angle) rotates an object in a counter-clockwise (anti-clockwise) direction.

19) Which of the following transformation is used for altering the object's size?

1. Translation
2. Scaling
3. Rotation
4. None of the above

Hide Answer Workspace

**Answer:** (b) Scaling

**Explanation:** Scaling is used to alter or change the size of objects. The change is done using scaling factors.

20) What happens if the values of scaling factors sx and sy less than 1 (i.e., sx<1 and sy<1)?

1. No change in the object's size
2. Reduce the object's size
3. Increase the object's size
4. None of the above

Hide Answer Workspace

**Answer:** (b) Reduce the object's size

**Explanation:** If scaling factors are less than one, the size of the object will be reduced.

21) In which of the following case, the uniform scaling will be produced?

1. Values of scaling factors sx and sy are unequal.
2. Values of scaling factors sx and sy are equal.
3. Both of the above
4. None of the above

Hide Answer Workspace

**Answer:** (b) Values of scaling factors sx and sy are equal.

**Explanation:** If the values of scaling factors sx and sy are equal, it is called Uniform Scaling.

22) The Cohen-Sutherland algorithm divides the two-dimensional space in how many regions?

1. 4
2. 8
3. 9
4. 23

Hide Answer Workspace

**Answer:** (c) 9

**Explanation:** If the line is neither a visible case nor an invisible case, then it will be considered to be the clipped case. The Cohen-Sutherland algorithm will divide the 2D space into nine regions. All nine regions are assigned codes. Each code is of 4 bits. If both endpoints of the line have end bits zero, then the line is considered to be visible.

23) The 4-bit code of the bottom-region among the nine regions divided using the Cohen-Sutherland algorithm?

1. 0000
2. 0010
3. 0110
4. 0101

Hide Answer Workspace

**Answer:** (c) 0110

**Explanation:** The 4-bit code of the bottom-right region amongst the nine regions divided by the Cohen-Sutherland algorithm is **0110**.

24) According to the Cohen-Sutherland algorithm, where the line lies, if the 4-bit code of both ends is 0000, and also the logical OR gives 0000?

1. Half outside half inside
2. Completely inside
3. Completely outside
4. None of the above

Hide Answer Workspace

**Answer:** (b) Completely inside

**Explanation:** The line will be completely visible if both end codes are 0000, and the result of their logical OR also 0000.

25) Which one of the following is the most commonly used and basic input device?

1. Mouse
2. Printer
3. Scanner
4. Keyboard

Hide Answer Workspace

**Answer:** (d) Keyboard

**Explanation:** The most commonly used input device is a keyboard. The data is entered by pressing the set of keys. All keys are labeled. A keyboard with 101 keys is called a QWERTY keyboard.

26) Which of the following device is used for the 3D positioning of an object?

1. Trackball
2. Mouse
3. Spaceball
4. All of the above

Hide Answer Workspace

**Answer:** (c) Spaceball

**Explanation:** Spaceball is used for the three-dimensional positioning of the object.

27) Which is not the input device?

1. Impact printers
2. Trackball
3. Mouse
4. Keyboard

Hide Answer Workspace

**Answer:** (a) Impact printers

**Explanation:** The printers that print the characters by striking against the ribbon and onto the papers are known as Impact Printers

28) Which of the following is an example of the impact device?

1. Laser printer
2. Inkjet printer
3. Line printer
4. None of the above

Hide Answer Workspace

**Answer:** (c) Line printer

**Explanation:** Line printers are the impact printers that print one line at a time. It is a high-speed impact printer as it can print 500 to 3000 lines per minute. Drum printer and chain printer are examples of line printers.

29) Which of the following allows us to select the screen positions with the touch of a finger?

1. Mouse
2. Trackball
3. Touch panel
4. None of the above

Hide Answer Workspace

**Answer:** (c) Touch panel

**Explanation:** Touch Panels is a type of display screen that has a touch-sensitive transparent panel covering the screen. A touch screen registers input when a finger or other object comes in contact with the screen.

30) Which is a common device for painting or selecting the object's co-ordinate positions?

1. Digitizer
2. Touch panel
3. Image scanner
4. Keyboard

Hide Answer Workspace

**Answer:** (a) Digitizer

**Explanation:** The digitizer is an operator input device, which contains a large, smooth board & an electronic tracking device, which can be changed over the surface to follow existing lines. The electronic tracking device contains a switch for the user to record the desire x & y coordinate positions. The coordinates can be entered into the computer memory or stored or an off-line storage medium such as magnetic tape.

31) Grayscale is used for -

1. Random scan display
2. Monitors with color capability
3. Monitors with no color capability
4. All of the above

Hide Answer Workspace

**Answer:** (c) Monitors with no color capability

**Explanation:** Grayscale images are monochrome images; means they have only one color. Grayscale images do not contain any information about color. Each pixel determines available different grey levels.

32) Clipping in computer graphics is primarily used for -

1. zooming
2. copying
3. removing objects and lines
4. All of the above

Hide Answer Workspace

**Answer:** (c) removing objects and lines

**Explanation:** When we have to display a large portion of the picture, then not only scaling & translation is necessary, the visible part of the picture is also identified. For deciding the visible and invisible portion, a particular process called clipping is used. Clipping determines each element into the visible and invisible portions. The visible portion is selected. An invisible portion is discarded.

33) Random scan systems are used for -

1. Color drawing application
2. Pixel drawing application
3. Line drawing application
4. None of the above

Hide Answer Workspace

**Answer:** (c) Line drawing application

**Explanation:** Random Scan System uses an electron beam that operates like a pencil to create a line image on the CRT screen. The picture is constructed out of a sequence of straight-line segments.

34) How many phosphor color dots at each pixel position in a shadow mask CRT?

1. 1
2. 7
3. 2
4. 3

Hide Answer Workspace

**Answer:** (d) 3

**Explanation:** A shadow mask CRT has 3 phosphor color dots at each pixel position.

35) Shadow mask method is used in -

1. Raster scan system
2. Random scan system
3. Both (a) & (b)
4. None of the above

Hide Answer Workspace

**Answer:** (a) Raster scan system

**Explanation:** Shadow Mask Method is commonly used in Raster-Scan System because they produce a much wider range of colors than the beam-penetration method.

36) In which of the following CRT methods, there is an occurrence of convergence problem?

1. Shadow mask method
2. Beam penetration
3. Both of the above
4. None of the above

Hide Answer Workspace

**Answer:** (a) Shadow mask method

**Explanation:** The convergence problem occurs in the shadow mask method of the color CRT monitors. It is one of the limitations of the shadow mask method.

37) Which of the following uses the Beam penetration method?

1. Raster scan system
2. Random scan system
3. Both (a) & (b)
4. None of the above

Hide Answer Workspace

**Answer:** (b) Random scan system

**Explanation:** The Beam-Penetration method has been used with random-scan monitors.

38) Plasma panel is a type of -

1. Emissive display
2. Non-Emissive display
3. Printer
4. None of the above

Hide Answer Workspace

**Answer:** (a) Emissive display

**Explanation:** None

39) Which of the following algorithm is used to fill the interior of a polygon?

1. Boundary fill algorithm
2. Scan line polygon fill algorithm
3. Flood fill algorithm
4. All of the above

Hide Answer Workspace

**Answer:** (c) Flood fill algorithm

**Explanation:** When the boundary is of many colors and the interior is to be filled with one color, the flood fill algorithm is used.

40) Which of the algorithm is used to color a pixel if it is not colored and leaves it if it is already filled?

1. Boundary fill algorithm
2. Scan line polygon fill algorithm
3. Flood fill algorithm
4. All of the above

Hide Answer Workspace

**Answer:** (a) Boundary fill algorithm

**Explanation:** The Boundary fill algorithm checks whether the boundary pixels or adjacent pixels are colored or not. It leaves it, if the adjacent pixel is already filled or colored; otherwise, fill it.

41) A spline can be defined as -

1. Curved strip
2. A smooth curve is drawn using a pencil.
3. A flexible strip used to generate a smooth curve through a designated set of points.
4. None of the above

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**Answer:** (c) A flexible strip used to generate a smooth curve through a designated set of points

**Explanation:** The name spline is a flexible strip used to generate a smooth curve through a designated set of points. In computer Graphics, the name spline curves define any combined curve creates with polynomial portions fulfilling specified continuity methods at the edge of the pieces.

42) Which of the following are the 2d color models?

1. RGB and CMK
2. RGB and CMG
3. RGB and CMYK
4. All of the above

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**Answer:** (c) RGB and CMYK

**Explanation:** There are many color models. Some of them are RGB, CMYK, YIQ, HSV, and HLS, etc. RGB stands for Red, Green, and Blue. This color space is widely used in computer graphics. RGB are the main colors from which many colors can be made. CMYK stands for Cyan, Magenta, Yellow and Black. CMYK color model is used in electrostatic and ink-jet plotters, which deposits the pigmentation on paper.

43) RGB color model is used for -

1. Painting
2. Sketching
3. Printing
4. Computer display

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**Answer:** (d) Computer display

**Explanation:** The main objective of the RGB color model is for the sensing, defining, and display of pictures in electronic systems, such as televisions and computers, though it has also been utilizing in conventional photography.

44) Which of the following color will generate with the intersection of three primary RGB colors?

1. Green
2. Dark red
3. Dark blue
4. White

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**Answer:** (d) White

**Explanation:** RGB stands for Red, Green, and Blue. RGB are the main colors from which many colors can be made. The Intersection of three colors (red, green, and blue) in the RGB model will produce the white color.

45) The intersection of primary colors in the CMYK color model will generate the -

1. Green
2. White color
3. Black color
4. Dark red

Hide Answer Workspace

**Answer:** (c) Black color

**Explanation:** A color model described with the primary colors cyan, magenta, and yellow (CMY) is useful for defining color output to hard-copy devices. The intersection of primary colors in the CMYK color model will produce the black color.

46) Select the set of colors produced in the beam-penetration method of the color CRT -

1. Red, Green, Blue
2. Cyan, Magenta, Blue
3. Red, Green, Orange, Yellow
4. Green, Black, Orange

Hide Answer Workspace

**Answer:** (c) Red, Green, Orange, Yellow

**Explanation:** Beam penetration method in color CRT produces four colors only, red, green, orange and yellow. A beam of slow electrons excites the outer red layer only; hence, the screen only shows red color. A beam of high-speed electrons excites the inner green layer. Thus the screen shows a green color.

47) The phase of determining the appropriate pixels for representing images or graphics object is called as -

1. Translation
2. Transformation
3. Rasterization
4. Scaling

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**Answer:** (c) Rasterization

**Explanation:** The phase of determining the appropriate pixels for representing images or graphics objects is called rasterization.

48) The process of displaying 3D into a 2D display unit is called as -

1. Resolution
2. Projection
3. Rasterization
4. Transformation

Hide Answer Workspace

**Answer:** (b) Projection

**Explanation:** The process of displaying 3D into a 2D display unit is called a projection. The projection changes 3D objects into a 2D projection plane.

49) The video device with reduced volume, power consumption and weight is -

1. CRT
2. Flat-panel display
3. Portable display
4. None of the above

Hide Answer Workspace

**Answer:** (b) Flat panel display

**Explanation:** The Flat-Panel display refers to a class of video devices with reduced volume, weight and power requirement compared to CRT.

Example: Small T.V. monitor, calculator, pocket video games, laptop computers, an advertisement board in an elevator.

50) Plasma panel is also called as -

1. Non-emissive display
2. Liquid crystal display
3. Gas discharge display
4. None of the above

Hide Answer Workspace

**Answer:** (c) Gas discharge display

**Explanation:** Plasma-Panels are also called as Gas-Discharge Display. It consists of an array of small lights.