

Computer Graphics Questions & Answers – Graphics Hardware and Display devices

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This section of our 1000+ Computer Graphics multiple choice questions focuses on Graphics Hardware and Display devices.

1. Which devices provides positional information to the graphics system ?

- a) Input devices
- b) Output devices
- c) Pointing devices
- d) Both a and c

[View Answer](#)

Answer: d

Explanation: Input devices positional information to the system they often called pointing devices.

2. The number of pixels stored in the frame buffer of a graphics system is known as

- a) Resolution
- b) Depth
- c) Resalution
- d) Only a

[View Answer](#)

Answer: d

Explanation: Number of pixels determines the resolution .

3. In graphical system, the array of pixels in the picture are stored in

- a) Memory
- b) Frame buffer
- c) Processor
- d) All of the mentioned

[View Answer](#)

Answer: a

Explanation: Frame buffer is mainly used to store pixels.

4. Heat supplied to the cathode by directing a current through a coil of wire is called

- a) Electron gun
- b) Electron beam
- c) Filament
- d) Anode and cathode

[View Answer](#)

Answer: c

Explanation: In CRT the filament is responsible for supply of power.

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5. The maximum number of points that can be displayed without overlap on a CRT is referred as

- a) Picture
- b) Resolution
- c) Persistence
- d) Neither b nor c

[View Answer](#)

Answer: b

Explanation: none.

6. _____ stores the picture information as a charge distribution behind the phosphor-coated screen.

- a) Cathode ray tube
- b) Direct-view storage tube
- c) Flat panel displays
- d) 3D viewing device

[View Answer](#)

Answer: b

Explanation: Instead of refreshing, DVST stores the picture information behind the screen.

7. The devices which converts the electrical energy into light is called

- a) Liquid-crystal displays
- b) Non-emitters
- c) Plasma panels
- d) Emitters

[View Answer](#)

Answer: d

Explanation: Emissive displays are devices that convert electrical energy into light.

8. In which system, the Shadow mask methods are commonly used

- a) Raster-scan system
- b) Random-scan system
- c) Only b
- d) Both a and b

[View Answer](#)

Answer: a

Explanation: Raster-scan system uses shadow-mask method because they produce wide range of colors.

9. The process of digitizing a given picture definition into a set of pixel-intensity for storage in the frame buffer is called

- a) Rasterization
- b) Encoding
- c) Scan conversion

d) True color system

[View Answer](#)

Answer: c

Explanation: The digitization process is called scan conversion.

10. Which display devices allows us to walk around an object and view it from different sides.

- a) Direct view storage tubes
- b) Three-dimensional devices
- c) Flat panel display devices
- d) Plasma panel display devices

[View Answer](#)

Answer: b

Explanation: 3D display devices allows user to view the object from different sides.

11. In LCD, the refresh rate of the screen is

- a) 60 frames/sec
- b) 80 frames/sec
- c) 30 frames/sec
- d) 100 frames/sec

[View Answer](#)

Answer: a

Explanation: LCD screen is refreshed at 60 frames per second.

12. Random-scan system mainly designed for

- a) Realistic shaded screen
- b) Fog effect
- c) Line-drawing applications
- d) Only b

[View Answer](#)

Answer: c

Explanation: Random-scan system mainly designed for Line-drawing applications.

13. The primary output device in a graphics system is_____

- a) Scanner
- b) Video monitor
- c) Neither a nor b
- d) Printer

[View Answer](#)

Answer: b

Explanation: The video monitor is the commonly used output device.

14. On a black and white system with one bit per pixel, the frame buffer is commonly called as

- a) Pix map
- b) Multi map
- c) Bitmap
- d) All of the mentioned

[View Answer](#)

Answer: c

Explanation: Bit map frame buffer is always 1 bit per pixel.

15. Aspect ratio means

- a) Number of pixels
- b) Ratio of vertical points to horizontal points
- c) Ratio of horizontal points to vertical points
- d) Both b and c

[View Answer](#)

Answer: d

Explanation: none.

This section of our 1000+ Computer Graphics multiple choice questions focuses on Line Filling Algorithms.

1. The Cartesian slope-intercept equation for a straight line is

- a) $y = m.x + b$
- b) $y = b.x + m$
- c) $y = x.x + m$
- d) $y = b + m.m$

[View Answer](#)

Answer: a

Explanation: Equation for a straight line is $y = m.x + b$.

2. For lines with slope magnitude $|m| < 1$, Δx can be _____

- a) A set corresponding vertical deflection
- b) A set proportional to a small horizontal deflection voltage
- c) Only a
- d) All of the mentioned

[View Answer](#)

Answer: b

Explanation: Δx can be a set proportional to a small horizontal deflection voltage only if slope magnitude $|m| < 1$.

3. On raster system, lines are plotted with

- a) Lines
- b) Dots
- c) Pixels

d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: Using pixels lines can be plotted.

4. Expansion of line DDA algorithm is

- a) Digital difference analyzer
- b) Direct differential analyzer
- c) Digital differential analyzer
- d) Data differential analyzer

[View Answer](#)

Answer: c

Explanation: DDA stands for digital differential analyzer.

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5. Which algorithm is a faster method for calculating pixel positions?

- a) Bresenham's line algorithm
- b) Parallel line algorithm
- c) Mid-point algorithm
- d) DDA line algorithm

[View Answer](#)

Answer: d

Explanation: The DDA is a faster method for calculating pixel positions.

6. The disadvantage of lineDDA is

- a) Time consuming
- b) Faster
- c) Neither a nor b
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: The DDA algorithm takes more time than other algorithm.

7. An accurate and efficient raster line-generating algorithm is

- a) DDA algorithm
- b) Mid-point algorithm
- c) Parallel line algorithm
- d) Bresenham's line algorithm

[View Answer](#)

Answer: d

Explanation: Bresenham's line algorithm is a very efficient and accurate algorithm.

8. In Bresenham's line algorithm, if the distances $d_1 < d_2$ then decision parameter P_k is _____

- a) Positive
- b) Equal
- c) Negative
- d) Option a or c

[View Answer](#)

Answer: c

Explanation: If $d_1 < d_2$ then the decision variable is always negative.

9. Which is the best line algorithm to balance the processing load among the processors?

- a) Parallel line algorithm
- b) DDA line algorithm
- c) Bresenham's line algorithm
- d) Position Bresenham's line algorithm

[View Answer](#)

Answer: a

Explanation: If there are 'n' processes then this algorithm divides it into number of partitions and generates line segments.

10. The algorithm which uses multiple processors to calculate pixel positions is

- a) Midpoint algorithm
- b) Parallel line algorithm
- c) Bresenham's line algorithm
- d) All of the mentioned

[View Answer](#)

Answer: b

Explanation: In Parallel line algorithm each processors calculates pixel positions.

11. Coordinate references in the polyline function are stated as

- a) Relative coordinate values
- b) Absolute coordinate values
- c) Current position
- d) Real coordinate values

[View Answer](#)

Answer: b

Explanation: Coordinate references in the polyline function are stated as absolute coordinate values.

12. To apply the midpoint method, we define

- a) $\text{circle}(x, y) = x^2 + y^2 - r^2$
- b) $\text{circle}(x, y) = x + y^2 - r^2$
- c) $\text{circle}(x, y) = x^2 - y^2 - r^2$

d) $\text{circle}(x, y) = x^2 + y^2 - z^2$

[View Answer](#)

Answer: a

Explanation: None.

13. _____ is defined as set of points such that the sum of the distances is same for all points.

- a) Ellipses
- b) Lines
- c) Circles
- d) Only a

[View Answer](#)

Answer: d

Explanation: Ellipses is defined as set of points.

14. If the boundary is specified in a single color, and if the algorithm proceeds pixel by pixel until the boundary color is encountered is called

- a) Scan-line fill algorithm
- b) Boundary-fill algorithm
- c) Flood-fill algorithm
- d) Parallel curve algorithm

[View Answer](#)

Answer: b

Explanation: This algorithm proceeds outward pixel by pixel until the boundary color is encountered.

15. If we want to recolor an area that is not defined within a single color boundary is known as

- a) Boundary-fill algorithm
- b) Parallel curve algorithm
- c) Flood-fill algorithm
- d) Only b

[View Answer](#)

Answer: c

Explanation: We can paint such areas by replacing a specified interior color.

Computer Graphics Questions & Answers – Input Devices – 2

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This section of our 1000+ Computer Graphics multiple choice questions focuses on Input Devices.

1. _____ allows screen positions to be selected with the touch of a finger.

- a) Touch panels
- b) Image scanner
- c) Light pen
- d) Mouse

[View Answer](#)

Answer: a

Explanation: None.

2. What is the disadvantage of the light pen?

- a) It's shape
- b) They cannot detect positions
- c) Accurate reading
- d) Cannot detect positions within black areas

[View Answer](#)

Answer: d

Explanation: light pen requires special implementations and sometimes gives false reading due to background lighting in a room.

3. _____ is used in graphics workstation as input devices to accept voice commands.

- a) Touch panels
- b) Speech recognizers
- c) Only a
- d) All of the mentioned

[View Answer](#)

Answer: b

Explanation: Through speech recognizers user can give voice commands.

4. What voice the use of voice system?

- a) To initiate graphics operation
- b) To enter data
- c) Neither a nor b
- d) Both a and b

[View Answer](#)

Answer: d

Explanation: The voice system input can be used to initiate graphics operations or to enter data.

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5. When a voice command is given, the system searches the _____ for a frequency-pattern match.

- a) Memory
- b) Input data
- c) Dictionary
- d) Hard disk

[View Answer](#)

Answer: c

Explanation: System searches the dictionary for frequency pattern matching.

6. The device which is designed to minimize the background sound is

- a) Microphone
- b) Digitizers
- c) Data glove
- d) Joy stick

[View Answer](#)

Answer: a

Explanation: Microphone is designed to minimize the background sound.

7. The quality of a picture obtained from a device depends on

- a) Dot size
- b) Number of dots per inch
- c) Number of lines per inch
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: quality depends on these attributes.

8. Which of the following device is not the input device?

- a) Trackball and space ball
- b) Data glove
- c) Only d
- d) Impact printers

[View Answer](#)

Answer: c

Explanation: printer is an output device.

9. Which device contains thumbwheel, trackball and a standard mouse ball?

- a) Z mouse
- b) Joystick
- c) Mouse
- d) Trackball

[View Answer](#)

Answer: a

Explanation: These 3 buttons are the Z mouse features.

10. Virtual reality, CAD, and animations are the application of

- a) Z mouse
- b) Digitizers
- c) Data tablets
- d) Image scanners

[View Answer](#)

Answer: a

Explanation: Application of Z mouse includes virtual reality, CAD, and animations.

Computer Graphics Questions & Answers – Input Devices – 1

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This section of our 1000+ Computer Graphics multiple choice questions focuses on Input Devices.

1. The most commonly used input device is

- a) Mouse
- b) Keyboard
- c) Scanner
- d) Printer

[View Answer](#)

Answer: b

Explanation: Keyboard is the most commonly used input device.

2. Which keys allows user to enter frequently used operations in a single key stroke?

- a) Function keys
- b) Cursor control keys
- c) Trackball
- d) Control keys

[View Answer](#)

Answer: a

Explanation: Function keys are used to access frequently used areas.

3. _____ are used to measure dial rotations.

- a) Potentiometers
- b) Volta meter
- c) Parameter
- d) Only a

[View Answer](#)

Answer: d

Explanation: Potentiometer measures the dial rotations.

4. The device which is used to position the screen cursor is

- a) Mouse
- b) Joystick
- c) Data glove
- d) Both a and c

[View Answer](#)

Answer: a

Explanation: A mouse is small hand-held box used to position the screen cursor.

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5. _____ is used for detecting mouse motion.

- a) Optical sensor
- b) Rollers on the bottom of mouse
- c) Both a and b
- d) Sensor

[View Answer](#)

Answer: c

Explanation: Rollers and optical sensors are used to record the amount and direction of movement.

6. Trackball is

- a) Two-dimensional positioning device
- b) Three- dimensional positioning device
- c) Pointing device
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: Trackball is two-dimensional positioning device.

7. Space ball provide_____ degree of freedom.

- a) 10 degree
- b) 6 degree
- c) 8 degree
- d) 12 degree

[View Answer](#)

Answer: b

Explanation: Space ball provide 6 degree of freedom.

8. Which is the ball that can be rotated with the fingers or palm of the hand?

- a) Space ball
- b) Trackball

- c) Only a
- d) Both b and c

[View Answer](#)

Answer: b

Explanation: Trackball is a ball that can be rotated with the fingers or palm of the hand.

9. _____ is used for 3D positioning and modeling, animation and other application.
- a) Space ball
 - b) Trackball
 - c) Spac ball
 - d) All of the mentioned

[View Answer](#)

Answer: a

Explanation: Space ball is a 3D positioning device.

10. Potentiometers mounted at the base of the joystick measures
- a) The amount of movement
 - b) The direction
 - c) Position
 - d) Resolution

[View Answer](#)

Answer: a

Explanation: Potentiometers mounted at the base of the joystick measures the amount of movement.

11. Pressure-sensitive joysticks are also called
- a) Non movable stick
 - b) Joystick
 - c) Isometric joystick
 - d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: None.

12. Which is the device that is constructed with the series of sensors that detects hand and finger motion?
- a) Digitizers
 - b) Data glove
 - c) Joystick
 - d) Track ball

[View Answer](#)

Answer: b

Explanation: Data glove senses, detects hand and finger motion.

13. A common device for drawing, painting, or interactively selecting coordinate positions on an object is a

- a) Image scanner
- b) Digitizers
- c) Data glove
- d) Touch panels

[View Answer](#)

Answer: b

Explanation: Digitizers can be used for drawing, painting and selecting positions.

14. Which device is used to input two-dimensional coordinates by activating a hand cursor on a flat surface?

- a) Graphic tablet
- b) Data tablet
- c) Only b
- d) Both a and b

[View Answer](#)

Answer: d

Explanation: Graphic tablet are also called data tablet.

15. _____ can be used to determine the position on the data tablet.

- a) Strip microphones
- b) Signal strength
- c) Coded pulse
- d) Either Signal strength or coded pulse

[View Answer](#)

Answer: d

Explanation: Either Signal strength or coded pulse determine the position on the data tablet.

Computer Graphics Questions & Answers – Line Attributes

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This section of our 1000+ Computer Graphics multiple choice questions focuses on Line Attributes.

1. The basic attributes of a straight line segment are

- a) Type
- b) Width
- c) Color

d) All of these

[View Answer](#)

Answer: d

Explanation: Type, width and colors are the basic attributes of line.

2. A dashed line could be displayed by generating_____.

- a) Inter dash spacing
- b) Very short dashes
- c) Both a and b
- d) A or B

[View Answer](#)

Answer: a

Explanation: The inter dash spacing that is equal to the length of the solid sections displays dashed line.

3. A dotted line can be displayed by generating

- a) Very short dashes with spacing equal to and greater than dash size
- b) Very long dashes with spacing equal to or greater than dash size
- c) Very short dashes with spacing equal to and greater than dash size
- d) Dots

[View Answer](#)

Answer: c

Explanation: Very long dashes with spacing equal to or greater than dash size can displays dotted line.

4. Which of the following is not a line-type?

- a) Dashed line
- b) Dark line
- c) Dotted line
- d) Only b

[View Answer](#)

Answer: d

Explanation: Except dark line those are the types of the line.

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5. In an application program, to set line-type attributes the following statement is used.

- a) SetLinetype(lt)
- b) setLinetype(lt)
- c) SETLINETYPE(lt)
- d) SETLINE()

[View Answer](#)

Answer: b

Explanation: None.

6. The algorithm which displays line-type attributes by plotting pixel spans is

- a) Raster line algorithm
- b) Raster scan algorithm
- c) Random line algorithm
- d) Random scan algorithm

[View Answer](#)

Answer: a

Explanation: Raster line algorithm displays line-type attributes.

7. Pixel mask means

- a) A string containing only 1;s
- b) A string containing only 0's
- c) A string containing 1 and 0
- d) A string containing 0 and 0

[View Answer](#)

Answer: c

Explanation: Inter span spacing can be specified in a pixel mask that contains digits 1 and 0.

8. A heavy line on a video monitor could be displayed as

- a) Adjacent perpendicular lines
- b) Adjacent parallel lines
- c) Both a and b
- d) Neither a nor b

[View Answer](#)

Answer: b

Explanation: A heavy line displayed as adjacent parallel lines, while pen plotter might require pen changes.

9. To set the line-width attribute the following command is used.

- a) SETLINEWIDTHSCALEFACTOR (lw)
- b) Setlinewidth()
- c) Setlinewidthscalefacto (lw)
- d) setLineWidthScaleFactor (lw)

[View Answer](#)

Answer: d

Explanation: setLineWidthScaleFactor (lw) function can be used to set line-width attribute.

10. The parameter to "setLineWidthScaleFactor (lw) "function specifies?

- a) Standard width
- b) Relative width of the line
- c) Thickness of the line
- d) All of the mentioned

[View Answer](#)

Answer: b

Explanation: The positive value to lw indicates the relative width of the line.

Standard width, if Value=1

Thickness, if value>1.

11. We can adjust the shape of the line ends to give them a better appearance by using

- a) Line spacing
- b) More dots
- c) Line caps
- d) Round cap

[View Answer](#)

Answer: c

Explanation: Line caps are obtained by adjusting the end points of the line.

12. Thick line drawn with

- a) Butt caps
- b) Round caps
- c) Projecting square caps
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

13. We set the line-color value in PHIGS with the function

- a) setPolylineColorIndex (lc)
- b) setline Color()
- c) SETPOLYLINECOLORINDEX (lc)
- d) Only b

[View Answer](#)

Answer: a

Explanation: The setPolylineColorIndex (lc) function is used to set the line color.

14. If the angle between 2 connected line segments is very small then _____ can generate a long spike that distorts the appearance of the polyline.

- a) Miter join
- b) Round join
- c) Bevel join
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: Miter join provides long spikes that distort the appearance of the polyline.

15. A line drawn in the background color is

- a) Visible

- b) Invisible
- c) Visible or Invisible
- d) Only b

[View Answer](#)

Answer: d

Explanation: A line drawn in the background color is always invisible because both are same color.

Sanfoundry Global Education & Learning Series – Computer Graphics.

Computer Graphics Questions & Answers – Curve Attributes

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This section of our 1000+ Computer Graphics multiple choice questions focuses on Curve Attributes.

1. The basic parameter to curved attributes are
- a) Type
 - b) Width
 - c) Color
 - d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: Type, width and colors are the basic parameters to curved attributes.

2. Raster curves of various widths can be displayed using
- a) Horizontal or vertical spans
 - b) Horizontal spans
 - c) Vertical spans
 - d) Horizontal and vertical spans

[View Answer](#)

Answer: a

Explanation: Raster curves of various widths can be displayed using Horizontal or vertical spans.

3. If the magnitude of the curve slope is lesser than 1, then
- a) We can plot horizontal spans
 - b) We can plot vertical spans
 - c) Only b
 - d) All of the mentioned

[View Answer](#)

Answer: c

Explanation: if slope magnitude < 1 then we can plot vertical spans Magnitude > 1 then we can plot vertical spans.

4. If the slope magnitude is 1, then circles, ellipse and other curves will appear

- a) Thick
- b) Thinnest
- c) Big
- d) Rough

[View Answer](#)

Answer: b

Explanation: The magnitude value 1 displays thinnest curves, circles and ellipses.

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5. One of the method for displaying thick curves is

- a) Curve slope
- b) Curve width
- c) Curve cap
- d) Only c

[View Answer](#)

Answer: a

Explanation: This method fills the area b/w 2 parallel curves, whose separation distance=desired width.

6. The pixel masks for implementing line-type options are also used in the following algorithm to generate dashed and dotted patterns.

- a) Raster line algorithm
- b) Raster scan algorithm
- c) Raster curve algorithm
- d) Random curve algorithm

[View Answer](#)

Answer: c

Explanation: Raster curve algorithm generates dashed and dotted patterns.

7. We can generate the dashes in the various octants and the circle path with vertical path using

- a) Circles
- b) Circle symmetry
- c) Circle simmetry
- d) Curve slope

[View Answer](#)

Answer: b

Explanation: Circle symmetry generates dashes in the various octants, but we must shift the pixel positions to maintain the correct sequence.

8. The function of the pixel mask is
- a) To display dashes and inter dash spaces according to the slope
 - b) To display curved attributes
 - c) To display the thick curves
 - d) None of these

[View Answer](#)

Answer: a

Explanation: None.

9. If we want to display constant-length dashes, then we need to do the following.

- a) We need to adjust the number of pixels plotted in each dash
- b) We need to adjust the number of dots
- c) We must use line-type functions
- d) Neither a nor c

[View Answer](#)

Answer: a

Explanation: Number of pixels plotted in each dash, will displays constant-length dashes.

10. The curves displayed with a rectangular pen will be

- a) Thinner
- b) Thicker and magnitude slope is 1
- c) Thicker and magnitude slope >1
- d) B or C

[View Answer](#)

Answer: b

Explanation: None.

Computer Graphics Questions & Answers – Color and Grayscale Levels

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This section of our 1000+ Computer Graphics multiple choice questions focuses on Color and Grayscale Levels.

1. The color options are numerically coded with the following values.

- a) Ranging from 0 through the positive integer
- b) Ranging from 0 to 1
- c) Ranging from 0 to -0
- d) Only c

[View Answer](#)

Answer: a

Explanation: Color options can have any value from 0 to any positive number.

2. In color raster system, the number of color choices available depends on

- a) colors in frame buffer
- b) Amount of storage provided per pixel in frame buffer
- c) RGB color
- d) Neither a nor b

[View Answer](#)

Answer: b

Explanation: The amount of storage provided per pixels in frame buffer provides variety range of colors.

3. The color code "000" is for

- a) White
- b) Black
- c) Blue
- d) Green

[View Answer](#)

Answer: b

Explanation: All zero means it is black color (the mixture of red, green and blue).

4. Color information can be stored in

- a) Main memory
- b) Secondary memory
- c) Graphics card
- d) Frame buffer

[View Answer](#)

Answer: d

Explanation: The frame buffer is a space that is used to store the color information.

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5. Whenever a particular color code is specified in an application program, the corresponding binary value is placed in?

- a) Color look-up table
- b) Directly in frame buffer
- c) a or b
- d) Video lookup table

[View Answer](#)

Answer: b

Explanation: With the direct storage scheme, the binary values of color are stored in frame buffer.

6. The range that specifies the gray or grayscale levels is

- a) The value range from -1 to 1
- b) The value range from 0 to -1
- c) The value range from 0 to 1
- d) Any one of the above

[View Answer](#)

Answer: c

Explanation: Any value ranging from 0 to 1 can specify grayscale levels.

7. With 3 bits per pixel, we can accommodate 8 gray levels. If we use 8 bits per pixel then what is the value of gray levels?

- a) 18 gray levels
- b) 128 gray levels
- c) 256 gray levels
- d) No color

[View Answer](#)

Answer: c

Explanation: 8 bits per pixel means 2 power 8 i.e. 256.

8. With the display intensity corresponding to a given color index c_i calculated as

- a) $\text{Intensity} = 0.5[\max(r, g, b) + \max(r, g, b)]$
- b) $\text{Intensity} = 0.5[\min(r, g, b) + \min(r, g, b)]$
- c) $\text{Intensity} = 0.5[\max(r, g, b) - \max(r, g, b)]$
- d) $\text{Intensity} = 0.5[\min(r, g, b) + \max(r, g, b)]$

[View Answer](#)

Answer: d

Explanation: None.

9. A user can set color-table entries in a PHIGS application program with the function

- a) `setColourRepresentation (ws, ci, colorptr)`
- b) `setColorRepresentation (ws, ci, colorptr)`
- c) `setColour (ws, ci, colorptr)`
- d) `setColourRepresentation ()`

[View Answer](#)

Answer: a

Explanation: By using `setColourRepresentation (ws, ci, colorptr)` we can set the color-table.

10. If any intensity input value near 0.33 would be stored as the binary value 1 in the frame buffer, then it displays

- a) Dark green color
- b) Light gray color
- c) Dark gray color
- d) White or black

[View Answer](#)

Answer: c

Explanation: The intensity value 0.0 and 1 for black white respectively, and it is 0.33 for dark gray and 0.67 for light gray.

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Computer Graphics Questions & Answers – Area Fill Attributes

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This section of our 1000+ Computer Graphics multiple choice questions focuses on Area Fill Attributes.

1. A basic fill style is selected in a PHIGS program with the function

- a) setInteriorStyle (fs)
- b) setStyle (fs)
- c) SetfillStyle (fs)
- d) setInteriorStyleIndex (fs)

[View Answer](#)

Answer: a

Explanation: We can select the basic fill style by using setInteriorStyle (fs).

2. Which one is not a type of basic fill styles?

- a) Hollow
- b) solid color
- c) Pattern
- d) Dark

[View Answer](#)

Answer: d

Explanation: Dark fill is not a type of basic fill style, rest of them is the basic fill styles.

3. The process of filling an area with rectangular pattern is called

- a) Tiling
- b) Linear fill
- c) Tint-fill
- d) Soft-fill

[View Answer](#)

Answer: a

Explanation: Rectangular fill pattern is called tiling or tiling pattern.

4. The algorithm which repaints an area that was originally painted by merging a foreground color F and background color B where $F \neq B$.

- a) Tint fill
- b) Flood fill
- c) Linear soft-fill
- d) Boundary fill

[View Answer](#)

Answer: c

Explanation: Linear soft-fill algorithm used to repaint the area.

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5. The fill color that is combined with the background color is known as

- a) Soft fill
- b) Tint fill
- c) Both a and b
- d) None

[View Answer](#)

Answer: c

Explanation: soft fill is also called tint fill.

6. Hatch fill procedures are implemented to draw

- a) Single hatching
- b) Cross hatching
- c) Either a or b
- d) Only b

[View Answer](#)

Answer: c

Explanation: This procedure is used to draw either single or cross hatching.

7. When 2 background colors B1 and B2 are mixed with foreground color F, the resulting pixel color P is

- a) $P=t_0 * F+t_1 * B_1+(1-t_0-t_1)B_2$
- b) $P=t_0 * F-t_1 * B_1+(1-t_0-t_1)B_2$
- c) $P=t_0 * F+t_1 * B_1+(1+t_0+t_1)B_2$
- d) Only a

[View Answer](#)

Answer: d

Explanation: None.

8. The operator that is used for combining a fill pattern with a background pattern is

- a) AND operator
- b) OR operator
- c) X-OR operator
- d) All of these

[View Answer](#)

Answer: d

Explanation: The pattern and background colors can be combined using Boolean operators.

9. Hollow areas are displayed using only the

- a) Boundary outline
- b) Line-drawing routine
- c) Hatched patterns
- d) Closed poly line

[View Answer](#)

Answer: a

Explanation: Using boundary outline the hollow areas can be displayed.

10. Options for filling a defined region include a choice between _____

- a) Solid color or a pattern fill
- b) Choices for particular colors and pattern
- c) Both a and b
- d) None

[View Answer](#)

Answer: c

Explanation: The filling options can be applied to polygon region and areas can be painted using various brush styles, colors, and transparency parameters.

Computer Graphics Questions & Answers – Bundled Attributes

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This section of our 1000+ Computer Graphics multiple choice questions focuses on Bundled Attributes.

1. The function which references a single attribute that specifies how a primitive is to be displayed with that attribute setting is called

- a) Individual attribute
- b) Unbundled attribute
- c) Bundled attribute
- d) A or B

[View Answer](#)

Answer: d

Explanation: Individual attribute are also known as unbundled attribute.

2. A particular set of attribute values for a primitive on each output device is chosen by specifying appropriate table index is known as?

- a) Individual attribute

- b) Unbundled attribute
- c) Bundled attribute
- d) A or B

[View Answer](#)

Answer: c

Explanation: Bundle attributes specifies group of attribute values. And these values can be bundled into the workstation table.

3. A table for which, a primitive defines groups of attribute values to be used when displaying that primitive on a particular output device is called

- a) Bundle table
- b) Index table
- c) Both a and b
- d) None of these

[View Answer](#)

Answer: a

Explanation: None.

4. The choice between a bundled attribute or an unbundled attribute is made by

- a) Setting switch
- b) Setting bundle table
- c) Index table
- d) Only a

[View Answer](#)

Answer: d

Explanation: By setting switch the user can change their choice between bundled attribute or an unbundled attribute.

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5. Entries in the bundle table for line attributes are set using the function

- a) Setlineattributes ()
- b) setPolylineRepresentation (ws, li, lt, lc)
- c) setPolylineRepresentation()
- d) only a

[View Answer](#)

Answer: b

Explanation: Entries in the bundle table for line attributes are set using the function setPolylineRepresentation (ws, li, lt, lc).

6. A poly-line that is assigned a table index value of 3 would be displayed using

- a) Dashed line
- b) Dotted line
- c) Same index

d) All of the mentioned

[View Answer](#)

Answer: a

Explanation: Using dashed line at half thickness the index value of 3 would be displayed.

7. Table entries for bundled area-fill attributes are set using the function

a) setInteriorRepresentation (ws, fi, fs, pi, fc)

b) SetInteriorRepresentation ()

c) Only b

d) Both a and b

[View Answer](#)

Answer: a

Explanation: The function setInteriorRepresentation (ws, fi, fs, pi, fc) can be used to set the bundled area-fill attributes.

8. The choice between a bundled attribute or an unbundled attribute is made by switch called?

a) Aspect flag

b) Aspect ratio

c) Aspect source flag

d) Aspect destination flag

[View Answer](#)

Answer: c

Explanation: We can chose any one of the above attributes by setting switch for each of the attributes.

9. We can check the attribute values by

a) Stating the name of the attribute in the inquiry function

b) Setting attribute values

c) Only a

d) Neither a nor b

[View Answer](#)

Answer: c

Explanation: We can check the attribute values by stating the name of the attribute in the inquiry function.

10. A particular text index value is chosen with the function

a) setTextIndex()

b) settextindex(ti)

c) SetTextIndex(ti)

d) setTextIndex(ti)

[View Answer](#)

Answer: d

Explanation: The function `setTextIndex(ti)` is used to chose the particular text index value.

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Computer Graphics Questions & Answers – Character Attributes

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This section of our 1000+ Computer Graphics multiple choice questions focuses on Character Attributes.

1. Which of the following is the basic attribute of a character?

- a) Font
- b) Size and color
- c) Orientation
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: Font, size, color and orientation are the basic attribute of a character.

2. Attribute can be set for

- a) Entire character strings
- b) Individual characters defined as marker symbol
- c) Neither a nor b
- d) Both a and b

[View Answer](#)

Answer: d

Explanation: Character attributes can be set to text as well as marker symbols defined as individual characters.

3. A particular font and associated styles can be set using the function

- a) `setTextfont (tf)`
- b) `setfont (tf)`
- c) `setFont (tf)`
- d) `setTextFont()`

[View Answer](#)

Answer: a

Explanation: The function `setTextfont (tf)` can be used to set the font and its style. Where “tf” specifies the available fonts style.

4. When a character string is to be displayed, the which color is used to set the pixel value in frame buffer?

- a) White color
- b) Current color
- c) Black color
- d) Any color

[View Answer](#)

Answer: b

Explanation: The current color is used to set the pixel value corresponding to the character shape and positions.

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5. The Character size is specified by

- a) Printers
- b) Compositors
- c) Frame buffer
- d) Both a and b

[View Answer](#)

Answer: d

Explanation: The Character size is specified by printers and compositors in points where 1 point is 0.013837 inch.

6. The distance between the bottom-line and the top-line of the character body is

- a) Same for all character
- b) Different for all character
- c) Same for some character
- d) Different for some character

[View Answer](#)

Answer: a

Explanation: The distance between the bottom-line and the top-line of the character body is always same for all the characters.

7. The width of the text or character can be set using the function

- a) setCharacterExpansionFactor (cw)
- b) SetCharacterExpansionFactor (cw)
- c) setCharacterFactor (cw)
- d) setCharacterExpansionfactor (cw)

[View Answer](#)

Answer: a

Explanation: In this function the parameter cw (character-width) sets the width of the character.

8. _____ is a single character that can be displayed in different colors and in different sizes.

- a) String
- b) Marker symbol
- c) Only a
- d) Symbols

[View Answer](#)

Answer: b

Explanation: A marker symbols can be displayed in any colors and in any size.

9. A function that allows the user to select a particular character to be as marker symbol is

- a) setmarkertype (mt)
- b) setMarkersymbol(mt)
- c) setMarkerType (mt)
- d) SETMARKER()

[View Answer](#)

Answer: c

Explanation: None.

10. The orientation for a displayed character string is set according to, which of the following function?

- a) Setcharacterupvector()
- b) setcharacterUpvector(upvect)
- c) setCharacterUpVector(upvec)
- d) only b

[View Answer](#)

Answer: c

Explanation: According to the direction of the character up vector, the orientation for a displayed character string is set.

Computer Graphics Questions & Answers – Character Generation

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This set of Computer Graphics Multiple Choice Questions & Answers (MCQs) focuses on “Character Generation”.

1. Which of the following is a video editing tool that produces an animated text which can be inserted into video streams?

- a) Character generator
- b) Title generator
- c) Video generator

d) Animation generator

[View Answer](#)

Answer: a

Explanation: Character generator also called as CG in video editing is the software or hardware that produces animated text video streams.

2. Is it possible to have hardware as character generator?

a) True

b) False

[View Answer](#)

3. Which type of character generators are used in television production studios?

a) Hardware character generators

b) Software character generators

c) Both Hardware and software character generators can be used

d) Title generators are used

[View Answer](#)

Answer: a

Explanation: Generally, only Hardware character generators are used in television studios. They provide a key signal. While the compositing vision mixer can use an alpha channel to determine which areas of the CG video are translucent.

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4. Why aren't camcorder CG used more frequently in the titler market?

a) They don't record for longer time period

b) They use a background of video for title super imposition

c) They have low storage capacity

d) They are not economically feasible

[View Answer](#)

Answer: c

Explanation: They have 2 drawbacks, first is that you have to give titles as you shoot and second, they have very low capacity in comparison to others.

5. How many Methods of character generations are there?

a) 2

b) 3

c) 4

d) 5

[View Answer](#)

Answer: b

Explanation: There are three methods. Those 3 methods are Stroke method, Bitmap method and Starburst method. Each of them has different types of function.

6. Which method of character generation is also called Dot-matrix method?

- a) Stroke method
- b) Bitmap method
- c) Starbust method
- d) There isn't that type of method

[View Answer](#)

Answer: b

Explanation: Bitmap method is also called a dot-matrix method as it uses arrays of dots for character generation. These dots are the points for an array whose size is fixed.

7. In which method, graph is used in form of line to line?

- a) Stroke method
- b) Bitmap method
- c) Starbust method
- d) Dot-matrix method

[View Answer](#)

Answer: a

Explanation: In Stroke method, graph is drawn in the form of line by line. Line drawing algorithm DDA follows this method for line drawing.

8. In which method, fixed pattern of a line is used to generate characters?

- a) Stroke method
- b) Bitmap method
- c) Starbust method
- d) Dot-matrix method

[View Answer](#)

Answer: c

Explanation: In Starbust method, a combination of 24bit line segment is used. It is a method in which there is a particular pattern where only 24 strokes are defined for character generation.

9. Which method has the poorest character quality?

- a) Stroke method
- b) Bitmap method
- c) Starbust method
- d) Dot-matrix method

[View Answer](#)

Answer: c

Explanation: Character quality is poor in Starbust method and is worse for curved characters. Whereas in Bitmap method and stroke method, it is very good as they use new technologies.

10. Character generators can produce _____

- a) Different type size but same fonts

- b) Same type size but different fonts
- c) Same type size and fonts
- d) Different type size and fonts

[View Answer](#)

Answer: d

Explanation: Character generators can produce different type sizes and fonts depending on the requirement. You can alter the type, size as well as colour of fonts too using character generators.

11. Font colours can be changed using character generators.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: Simple systems offer eight colours: black, white, yellow, red, magenta, blue, cyan and green. More sophisticated systems offer millions of colours.

Computer Graphics Questions & Answers – Area Sampling

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This set of Computer Graphics Multiple Choice Questions & Answers (MCQs) focuses on “Area Sampling”.

1. We can think a line as a _____ in the grid.

- a) Parallelogram
- b) Rectangle
- c) Circle
- d) Triangle

[View Answer](#)

Answer: b

Explanation: A line can be viewed as a rectangle of defined thickness. It covers a desired area in the grid. Even the thinnest horizontal line has a thickness of one pixel.

2. Line should set an intensity of only a single pixel in a column to black.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: A line should not set an intensity of a single pixel in a column to black, but rather should contribute some amount of intensity to each pixel in the column, whose area it intersects.

3. A signal can also be represented as _____

- a) Amplitude domain
- b) Signal domain
- c) Frequency domain
- d) Phase domain

[View Answer](#)

Answer: c

Explanation: The signal can also be represented as a frequency domain, that is why we may represent it as a sum of two different sine waves.

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4. What is lower bound on the sampling rate known as?

- a) Syquist rate
- b) Nyquist rate
- c) Hartley rate
- d) Sampling rate

[View Answer](#)

Answer: b

Explanation: Sampling theory tells us that a signal can be reconstructed by its samples. The original signal is sampled at a frequency larger than twice. This sampling rate is called Nyquist rate.

5. The equal area in area sampling contributes _____

- a) Equal intensity
- b) Greater intensity
- c) Lower intensity
- d) Area is not dependent on the intensity

[View Answer](#)

Answer: a

Explanation: The equal area contributes to equal intensity in area sampling. Only the total amount of overlapped area matters, regardless of the distance between the pixel's centre.

6. Which of the following is NOT a type of area sampling?

- a) Weighted area sampling
- b) Unweighted area sampling
- c) Anti-aliasing
- d) Point sampling

[View Answer](#)

Answer: d

Explanation: Weighted and unweighted area sampling are types of area sampling classified on the basis of proportionality of intensity. Anti-aliasing is another name of unweighted area sampling whereas, point sampling is not a type of area sampling.

7. The technique of setting the intensity proportional to the amount of area covered is used in weighted area sampling.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: The technique of setting the intensity proportional to the amount of area covered is used in unweighted area sampling. This technique produces noticeably better results than others.

8. What happens to intensity if an area of overlapping increases?

- a) Intensity remains same
- b) Intensity decreases
- c) Intensity increases
- d) Can't say anything

[View Answer](#)

Answer: c

Explanation: When the line covers pixel completely the intensity is a maximum while when the line doesn't touch the pixel the intensity is zero. Hence we can say, the intensity is directly proportional to the overlapping area.

9. What is the effect of weighted area sampling on adjacent pixels?

- a) Intensity is increased
- b) Intensity is decreased
- c) Contrast is increased
- d) Contrast is decreased

[View Answer](#)

Answer: d

Explanation: The net effect of weighted area sampling is to decrease the contrast of adjacent pixels. This gives a lot of help in order to provide smooth transactions.

10. What is the name of the effect that causes different signals to become indistinguishable?

- a) Aliasing
- b) Anti-aliasing
- c) Sampling
- d) Staircase effect

[View Answer](#)

Answer: a

Explanation: When the resolution is too low, visual stair-stepping of edges occurs in an image. That effect is called aliasing.

Computer Graphics Questions & Answers – 2D Translation

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This section of our 1000+ Computer Graphics multiple choice questions focuses on 2D Translation.

1. A translation is applied to an object by
- a) Repositioning it along with straight line path
 - b) Repositioning it along with circular path
 - c) Only b
 - d) All of the mentioned

[View Answer](#)

Answer: a

Explanation: A translation is applied to an object by repositioning it along with straight line path from one location to another.

2. We translate a two-dimensional point by adding
- a) Translation distances
 - b) Translation difference
 - c) X and Y
 - d) Only a

[View Answer](#)

Answer: d

Explanation: We can translate 2D point by adding translation distances dx and dy .

3. The translation distances (dx , dy) is called as
- a) Translation vector
 - b) Shift vector
 - c) Both a and b
 - d) Neither a nor b

[View Answer](#)

Answer: c

Explanation: The translation distances (dx , dy) from its original position is called as translation vector or shift vector.

4. In 2D-translation, a point (x , y) can move to the new position (x' , y') by using the equation
- a) $x'=x+dx$ and $y'=y+dx$
 - b) $x'=x+dx$ and $y'=y+dy$
 - c) $X'=x+dy$ and $Y'=y+dx$
 - d) $X'=x-dx$ and $y'=y-dy$

[View Answer](#)

Answer: b

Explanation: By adding translation distance dx and dy to its original position (x, y) we can obtain a new position (x', y') .

5. The two-dimensional translation equation in the matrix form is

a) $P' = P + T$

b) $P' = P - T$

c) $P' = P * T$

d) $P' = p$

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Answer: a

Explanation: The 2D translation equation is $P' = P + T$.

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C Data Types – Bits & Bytes

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Memory Allocation
(C Data Types)

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6. _____ is a rigid body transformation that moves objects without deformation.

- a) Rotation
- b) Scaling
- c) Translation
- d) All of the mentioned

[View Answer](#)

Answer: c

Explanation: Translation a rigid body transformation that moves objects without deformation.

7. A straight line segment is translated by applying the transformation equation

- a) $P' = P + T$
- b) D_x and D_y
- c) $P' = P + P$

d) Only c

[View Answer](#)

Answer: a

Explanation: A straight line segment is translated by applying the transformation equation $P'=P+T$ to each of line endpoints.

8. Polygons are translated by adding _____ to the coordinate position of each vertex and the current attribute setting.

- a) Straight line path
- b) Translation vector
- c) Differences
- d) Only b

[View Answer](#)

Answer: d

Explanation: None.

9. To change the position of a circle or ellipse we translate

- a) Center coordinates
- b) Center coordinates and redraw the figure in new location
- c) Outline coordinates
- d) All of the mentioned

[View Answer](#)

Answer: b

Explanation: By translating the center coordinates and redraw the figure in new location we can change the position of a circle or ellipse.

10. The basic geometric transformations are

- a) Translation
- b) Rotation
- c) Scaling
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: These are the basic geometric transformations and other transformations are reflection and shear.

Computer Graphics Questions & Answers – 2D Rotation

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This section of our 1000+ Computer Graphics multiple choice questions focuses on 2D Rotation.

1. A two dimensional rotation is applied to an object by

- a) Repositioning it along with straight line path
- b) Repositioning it along with circular path
- c) Only b
- d) Any of the mentioned

[View Answer](#)

Answer: c

Explanation: A two dimensional rotation is applied to an object by repositioning it along with circular path.

2. To generate a rotation , we must specify

- a) Rotation angle Θ
- b) Distances dx and dy
- c) Rotation distance
- d) All of the mentioned

[View Answer](#)

Answer: a

Explanation: Generate a rotation, we must specify rotation angle Θ of the rotation point or pivot point which the object is to be rotated.

3. Positive values for the rotation angle Θ defines

- a) Counterclockwise rotations about the end points
- b) Counterclockwise translation about the pivot point
- c) Counterclockwise rotations about the pivot point
- d) Negative direction

[View Answer](#)

Answer: c

Explanation: A positive value for the rotation angle Θ defines counterclockwise rotations about the pivot point.

4. The rotation axis that is perpendicular to the xy plane and passes through the pivot point is known as

- a) Rotation
- b) Translation
- c) Scaling
- d) Shearing

[View Answer](#)

Answer: a

Explanation: The rotation transformation is also described as a rotation about a rotation axis that is perpendicular to the xy plane and passes through the pivot point.

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5. The original coordinates of the point in polar coordinates are

- a) $X'=r \cos (\Phi +\Theta)$ and $Y'=r \cos (\Phi +\Theta)$
- b) $X'=r \cos (\Phi +\Theta)$ and $Y'=r \sin (\Phi +\Theta)$
- c) $X'=r \cos (\Phi -\Theta)$ and $Y'=r \cos (\Phi -\Theta)$
- d) $X'=r \cos (\Phi +\Theta)$ and $Y'=r \sin (\Phi -\Theta)$

[View Answer](#)

Answer: b

Explanation: The original coordinates of the point in polar coordinates are $X'=r \cos (\Phi +\Theta)$ and $Y'=r \sin (\Phi +\Theta)$.

6. The two-dimensional rotation equation in the matrix form is

- a) $P'=P+T$
- b) $P'=R*P$
- c) $P'=P*P$
- d) $P'=R+P$

[View Answer](#)

Answer: b

Explanation: The 2D translation equation is $P'=R*P$.

7. _____ is the rigid body transformation that moves object without deformation.

- a) Translation
- b) Scaling
- c) Rotation
- d) Shearing

[View Answer](#)

Answer: c

Explanation: Rotation is the rigid body transformation that moves object without deformation.

8. An ellipse can also be rotated about its center coordinates by rotating

- a) End points
- b) Major and minor axes
- c) Only a
- d) None

[View Answer](#)

Answer: b

Explanation: None.

Computer Graphics Questions & Answers – 2D Scaling

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This section of our 1000+ Computer Graphics multiple choice questions focuses on 2D Scaling.

1. The transformation that is used to alter the size of an object is

- a) Scaling
- b) Rotation
- c) Translation
- d) Reflection

[View Answer](#)

Answer: a

Explanation: Scaling is used to alter the size of an object.

2. The two-dimensional scaling equation in the matrix form is

- a) $P' = P + T$
- b) $P' = S * P$
- c) $P' = P * R$
- d) $P' = R + S$

[View Answer](#)

Answer: b

Explanation: The 2d scaling equation is $P' = S * P$.

3. Scaling of a polygon is done by computing

- a) The product of (x, y) of each vertex
- b) (x, y) of end points
- c) Center coordinates
- d) Only a

[View Answer](#)

Answer: d

Explanation: Scaling of a polygon is done by computing the product of (x, y) of each vertex with scaling factor s_x and s_y to produce the transformation coordinates (X_{new} , Y_{new}).

4. If the scaling factors values s_x and $s_y < 1$ then

- a) It reduces the size of object
- b) It increases the size of object
- c) It stunts the shape of an object
- d) None

[View Answer](#)

Answer: a

Explanation: If the scaling factors values s_x and $s_y < 1$ then it reduces the size of object.

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5. If the scaling factors values s_x and s_y are assigned to the same value then

- a) Uniform rotation is produced

- b) Uniform scaling is produced
- c) Scaling cannot be done
- d) Scaling can be done or cannot be done

[View Answer](#)

Answer: b

Explanation: When s_x and s_y are assigned the same value then uniform scaling is produced that maintains relative object proportions.

6. If the scaling factors values s_x and s_y are assigned to unequal values then

- a) Uniform rotation is produced
- b) Uniform scaling is produced
- c) Differential scaling is produced
- d) Scaling cannot be done

[View Answer](#)

Answer: c

Explanation: Unequal values for s_x and s_y results in differential scaling that is often used in design applications.

7. The objects transformed using the equation $P' = S * P$ should be

- a) Scaled
- b) Repositioned
- c) Both a and b
- d) Neither a nor b

[View Answer](#)

Answer: c

Explanation: The objects transformed using the equation $P' = S * P$ should be scaled and repositioned.

8. We control the location of a scaled object by choosing the position is known as

- a) Pivot point
- b) Fixed point
- c) Differential scaling
- d) Uniform scaling

[View Answer](#)

Answer: b

Explanation: None.

9. If the value of $s_x=1$ and $s_y=1$ then

- a) Reduce the size of object
- b) Distort the picture
- c) Produce an enlargement
- d) No change in the size of an object

[View Answer](#)

Answer: d

Explanation: $s_x = s_x = 1$ does not change the size of the object.

10. The polygons are scaled by applying the following transformation.

- a) $X' = x * S_x + X_f(1 - S_x)$ and $Y' = y * S_y + Y_f(1 - S_y)$
- b) $X' = x * S_x + X_f(1 + S_x)$ and $Y' = y * S_y + Y_f(1 + S_y)$
- c) $X' = x * S_x + X_f(1 - S_x)$ and $Y' = y * S_y - Y_f(1 - S_y)$
- d) $X' = x * S_x * X_f(1 - S_x)$ and $Y' = y * S_y * Y_f(1 - S_y)$

[View Answer](#)

Answer: a

Explanation: The polygons are scaled by applying the transformation $X' = x * S_x + X_f(1 - S_x)$ and $Y' = y * S_y + Y_f(1 - S_y)$.

Computer Graphics Questions & Answers – Matrix Representations and Homogeneous Coordinates

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This section of our 1000+ Computer Graphics multiple choice questions focuses on Matrix Representations and Homogeneous Coordinates.

1. The matrix representation for translation in homogeneous coordinates is

- a) $P' = T + P$
- b) $P' = S * P$
- c) $P' = R * P$
- d) $P' = T * P$

[View Answer](#)

Answer: d

Explanation: The matrix representation for translation is $P' = T * P$.

2. The matrix representation for scaling in homogeneous coordinates is

- a) $P' = S * P$
- b) $P' = R * P$
- c) $P' = dx + dy$
- d) $P' = S * S$

[View Answer](#)

Answer: a

Explanation: The matrix representation for scaling is $P' = S * P$.

3. The matrix representation for rotation in homogeneous coordinates is

- a) $P' = T + P$
- b) $P' = S * P$
- c) $P' = R * P$

d) $P'=dx+dy$

[View Answer](#)

Answer: c

Explanation: The matrix representation for rotation is $P'=R*P$.

4. What is the use of homogeneous coordinates and matrix representation?

- a) To treat all 3 transformations in a consistent way
- b) To scale
- c) To rotate
- d) To shear the object

[View Answer](#)

Answer: a

Explanation: To treat all 3 transformations in a consistent way, we use homogeneous coordinates and matrix representation.

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5. If point are expressed in homogeneous coordinates then the pair of (x, y) is represented as

- a) (x', y', z')
- b) (x, y, z)
- c) (x', y', w)
- d) (x', y', w)

[View Answer](#)

Answer: d

Explanation: If point are expressed in homogeneous coordinates then we add 3rd coordinate to the point (x, y) , that is represented as (x', y', w) .

6. For 2D transformation the value of third coordinate i.e. $w=?$

- a) 1
- b) 0
- c) -1
- d) Any value

[View Answer](#)

Answer: a

Explanation: For 2D we have $(x, y, 1)$ i.e. $w=1$.

7. We can combine the multiplicative and translational terms for 2D into a single matrix representation by expanding

- a) 2 by 2 matrix into 4*4 matrix
- b) 2 by 2 matrix into 3*3
- c) 3 by 3 matrix into 2 by 2
- d) Only c

[View Answer](#)

Answer: b

Explanation: We can combine the multiplicative and translational terms for 2D into a single matrix representation by expanding 2 by 2 matrix representation into 3 by 3.

8. The general homogeneous coordinate representation can also be written as

- a) (h.x, h.y, h.z)
- b) (h.x, h.y, h)
- c) (x, y, h.z)
- d) (x,y,z)

[View Answer](#)

Answer: b

Explanation: The general homogeneous coordinate representation can also be written as (h.x, h.y, h).

Computer Graphics Questions & Answers – Composite 2D Transformations

[« Prev](#)

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This set of Computer Graphics Questions and Answers for Aptitude test focuses on “Composite 2D Transformations”.

1. Two successive translations are _____

- a) Multiplicative
- b) Inverse
- c) Subtractive
- d) Additive

[View Answer](#)

Answer: d

Explanation: Successive translations are additive.

$$P' = T(tx_1, ty_1) \cdot [T(tx_2, ty_2)] P$$

$$= \{T(tx_1, ty_1) \cdot T(tx_2, ty_2)\} \cdot P$$

$$\text{Or } T(tx_1, ty_1) \cdot T(tx_2, ty_2) = T(tx_1+tx_2, ty_1 + ty_2).$$

2. Two successive translations are not commutative.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: According to commutative property, the order does not matter. Same as in the case of successive translations. Hence we can say that two successive translations are commutative.

3. General pivot point rotation can be expressed as _____

- a) $T(zr, yr).R(\theta).T(-zr, -yr) = R(xr, yr, \theta)$
- b) $T(xr, yr).R(\theta).T(-xr, -yr) = R(xr, yr, \theta)$
- c) $T(xr, yr).R(\theta).T(-xr, -yr) = R(zr, yr, \theta)$
- d) $T(xr, yr).R(\theta).T(-xr, -yr) = R(xr, yr, Q)$

[View Answer](#)

Answer: b

Explanation: Since the first two parameters are in 2D, hence only 'x' and 'y' can be variable along with 'θ'. In other options, there is one more parameter 'z'.

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4. Which of the following is NOT correct? (A, B and C are matrices)

- a) $A.B = B.A$
- b) $A.B.C = (A.B).C = A.(B.C)$
- c) $C(A+B) = C.A + C.B$
- d) $1 A = A 1$

[View Answer](#)

Answer: a

Explanation: Matrix multiplication does not commute. We cannot switch the order of the factors and expect to end up with the same result. Hence, $A.B \neq B.A$.

5. Reflection about the line $y=0$, the axis, is accomplished with the transformation matrix with how many elements as '0'?

- a) 8
- b) 9
- c) 4
- d) 6

[View Answer](#)

Answer: d

Explanation: The matrix used for reflection about $y=0$ is an identity matrix with 6 '0's and two '1's and one element as '-1'.

6. Which transformation distorts the shape of an object such that the transformed shape appears as if the object were composed of internal layers that had been caused to slide over each other?

- a) Rotation
- b) Scaling up
- c) Scaling down
- d) Shearing

[View Answer](#)

Answer: d

Explanation: Two common shearing transformations are the type of transformation that shift coordinate x values coordinate y values. In shear transformation, the transformed shape

appears as if the object were composed of internal layers that had been caused to slide over each other.

7. Transpose of a column matrix is _____

- a) Zero matrix
- b) Identity matrix
- c) Row matrix
- d) Diagonal matrix

[View Answer](#)

Answer: c

Explanation: Transpose of a matrix is a matrix which is made by interchanging the rows and columns of the original matrix. Hence the transpose of column matrix is row matrix and vice versa.

8. Reversing the order in which a sequence of transformations is performed may affect the transformed position of an object.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: As we know that, matrix transformations are not commutative and the order of transformation matters. So it will affect the position of the object.

9. Which one of the following is the correct notation of a matrix with 'm' rows and 'n' columns?

- a) $m + n$
- b) $m - n$
- c) $m \times n$
- d) m/n

[View Answer](#)

Answer: c

Explanation: $m \times n$ represents a matrix with 'm' number of rows and 'n' number of columns, while others are just arithmetic operations which can be done on 2 matrices.

10. How many minimum numbers of zeros are there in '3 x 3' triangular matrix?

- a) 4
- b) 3
- c) 5
- d) 6

[View Answer](#)

Answer: b

Explanation: In a triangular matrix, all entries, either above or below the diagonal are zero. So in case of '3 x 3' matrix, there should be minimum 3 elements as 0.

Computer Graphics Questions & Answers – 2D Reflection and Shear

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This set of Computer Graphics Multiple Choice Questions & Answers (MCQs) focuses on “2D Reflection and Shear”.

1. In a rotation, by how much angle is the object rotated?

- a) 45 degree
- b) 90 degree
- c) 180 degree
- d) 360 degree

[View Answer](#)

Answer: c

Explanation: Reflection is the mirror image of the original object. It rotates the object 180 degrees. The left side image is formed into right side and vice versa.

2. Reflection is a special case of rotation.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: Reflection is a special case of rotation of 180° about a line in xy plane passing through the origin.

3. If two pure reflections about a line passing through the origin are applied successively the result is _____

- a) Pure rotation
- b) Quarter rotation
- c) Half rotation
- d) True reflection

[View Answer](#)

Answer: a

Explanation: When we apply reflection one time, it rotates the image by 180 degrees. So, if we repeat it 2 times the total reflection will be of 360 degrees.

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4. What is the determinant of the pure reflection matrix?

- a) 1
- b) 0
- c) -1

d) 2

[View Answer](#)

Answer: c

Explanation: The pure reflection matrix is:

$$[T] = \begin{vmatrix} 1 & 0 \\ 0 & -1 \end{vmatrix}$$

So, the determinant will be = $(1)(-1) - (0)(0) = 0$.

5. Which of the following is NOT true?

Image formed by reflection through a plane mirror is _____

- a) of same size
- b) same orientation
- c) virtual
- d) is at same distance from the mirror

[View Answer](#)

Answer: b

Explanation: In the image formed by reflection through a plane mirror, the right is turned into left and left is turned into right, hence changing the orientation. So the image formed by reflection through a plane mirror is not of the same orientation.

6. Which of the following represents shearing?

- a) $(x, y) \rightarrow (x+a, y+b)$
- b) $(x, y) \rightarrow (ax, by)$
- c) $(x, y) \rightarrow (x \cos(\theta) + y \sin(\theta), -x \sin(\theta) + y \cos(\theta))$
- d) $(x, y) \rightarrow (x+ay, y+bx)$

[View Answer](#)

Answer: d

Explanation: The first one represent translation, the second one represents scaling, third one rotation and the last one is representing shearing.

7. If a '3 x 3' matrix shears in X direction, how many elements of it are '1'?

- a) 2
- b) 3
- c) 6
- d) 5

[View Answer](#)

Answer: b

Explanation: The '3 x 3' matrix which shears in 'x' direction will have total 9 elements, 3 of which are '1', 5 zeroes and 1 variable in an upper triangle which is the scaling factor.

8. If a '3 x 3' matrix shears in Y direction, how many elements of it are '0'?

- a) 2
- b) 3
- c) 6

d) 5

[View Answer](#)

Answer: d

Explanation: The '3 x 3' matrix which shears in 'y' direction will have total 9 elements, 3 of which are '1', 5 zeroes and 1 variable in a lower triangle which is the scaling factor.

9. Shearing is also termed as _____

- a) Selecting
- b) Sorting
- c) Scaling
- d) Skewing

[View Answer](#)

Answer: d

Explanation: In the case of shear only one coordinate changes its coordinates and other preserves its values, that's why it is also called skewing.

10. Shearing and reflection are types of translation.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: Shearing and reflection are not types of translation. They are types of transformation. Even translation is also a type of transformation.

11. Which of this is compulsory for 2D reflection.

- a) Reflection plane.
- b) Origin
- c) Reflection axis
- d) Co-ordinate axis.

[View Answer](#)

Answer: c

Explanation: Reflection axis is the axis with respect to which reflection is done. In 3D, it is reflection plane rather than reflection axis.

Computer Graphics Questions & Answers – Transformations between Coordinate Systems and Affine Transformations

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This set of Computer Graphics Interview Questions and Answers focuses on "Transformations between Coordinate Systems and Affine Transformations".

1. A _____ is a system which uses one or more numbers, or coordinates, to uniquely determine the position of a point.

- a) co-ordinate system
- b) binary-system
- c) vector-system
- d) euclid geometry

[View Answer](#)

Answer: a

Explanation: A coordinate system is a system which uses one or more numbers, or coordinates, to uniquely determine the position of a point. It also determines the other geometric elements on a manifold on Euclid space.

2. Which of the co-ordinate represents X co-ordinate in (6,8,9)?

- a) 6
- b) 8
- c) 9
- d) 0

[View Answer](#)

Answer: a

Explanation: In a co-ordinate system, any position of a point is denoted as (x,y,z) . Where x denotes the perpendicular distance of the point from the x -axis. Hence x is the X co-ordinate.

3. Which of the co-ordinate represents Y co-ordinate in (6,8,9)?

- a) 6
- b) 8
- c) 9
- d) 0

[View Answer](#)

Answer: b

Explanation: In a co-ordinate system, any position of a point is denoted as (x,y,z) . Where y denotes the perpendicular distance of the point from the y -axis. Hence y is the Y co-ordinate.

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4. Which of the co-ordinate represents Z co-ordinate in (6,8,9)?

- a) 6
- b) 8
- c) 9
- d) 0

[View Answer](#)

Answer: c

Explanation: In a co-ordinate system, any position of a point is denoted as (x,y,z) . Where z

denotes the perpendicular distance of the point from the z-axis. Hence z is the Z co-ordinate.

5. _____ and _____ are two types of transformations.

- a) quadratic, cubic
- b) variable, affine
- c) linear, quadratic
- d) linear, affine

[View Answer](#)

Answer: d

Explanation: Linear and affine transformations are two different types of transformations of matrices. In linear, points are in vector space but in affine, points are in affine space.

6. Adding points to a vector give a vector.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: Adding a vector to a point gives a point, but Subtracting points gives a vector.

$$\vec{Q} + \vec{V} = \vec{P}$$

7. Which of the following properties are preserved in affine transformation?

- a) co-linearity
- b) convexity
- c) concavity
- d) parallelism

[View Answer](#)

Answer: c

Explanation: The col-linearity, convexity and parallelism of bunch of points are conserved in affine transformations but any 3 or more points which are concave can turn parallel, so we can say concavity is not conserved.

8. Ratio of length along a line is preserved in affine transformations.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: The ratio of length gets preserved, for example, distinct collinear points x_1, x_2, x_3 . The ratio of x_1x_2 and x_2x_3 is same as that of $f(x_1)f(x_2)$ and $f(x_2)f(x_3)$.

9. Which co-ordinates allow common vector operations such as translation, rotation, scaling and perspective projection to be represented as a matrix by which the vector is multiplied.

- a) vector co-ordinates
- b) 3d co-ordinates

- c) affine co-ordinates
- d) homogenous co-ordinates

[View Answer](#)

Answer: d

Explanation: The function of homogenous co-ordinates is to allow common vector operations such as translation, rotation, scaling and perspective projection to be represented as a matrix by which the vector is multiplied.

10. For orthonormal basis, which of these is correct?

- a) $M^{-1} = M^t$
- b) $M^{-1} = M^t$
- c) $M = M$
- d) $M^t = I$

[View Answer](#)

Answer: a

Explanation: Due to the effect of similitude and similarity transform, the inverse is equal to the transpose. So, we can say that $M^{-1} = M^t$.

Computer Graphics Questions & Answers – Two Dimensional Viewing

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This set of Computer Graphics Multiple Choice Questions & Answers (MCQs) focuses on “Two Dimensional Viewing”.

1. A view is selected by specifying a sub-area of the _____ picture area.

- a) half
- b) total
- c) full
- d) quarter

[View Answer](#)

Answer: b

Explanation: We consider a formal mechanism of view, that is, which part of the picture is to be displayed. That’s why we select a view by specifying a sub-area of the total picture area.

2. Co-ordinates are ranging according to the screen resolution.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: When we display a scene, only those objects which have a particular window are displayed. So for that mechanism to work, co-ordinates are made to range themselves according to the screen resolution.

3. Any convenient co-ordinate system or Cartesian co-ordinates which can be used to define the picture is called _____

- a) spherical co-ordinates
- b) vector co-ordinates
- c) viewport co-ordinates
- d) world co-ordinates

[View Answer](#)

Answer: d

Explanation: World Coordinate Systems (WCS) are the type of coordinate systems which describe the physical coordinates associated with a data array, such as sky coordinates. It is also used to denote wavelengths of a spectrum and to draw astronomical images.

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4. Which of the following co-ordinates are NOT used in 2d viewing transformation?

- a) modelling co-ordinates
- b) viewing co-ordinates
- c) vector co-ordinates
- d) device co-ordinates

[View Answer](#)

Answer: c

Explanation: Vector co-ordinates are used to denote vectors which are physical quantities having magnitude as well as direction. In 2d viewing transformations- Modelling co-ordinates, viewing co-ordinates, Normalised co-ordinates and Device co-ordinates are used.

5. The process of elimination of parts of a scene outside a window or a viewport is called _____

- a) cutting
- b) plucking
- c) clipping
- d) editing

[View Answer](#)

Answer: c

Explanation: Clipping is the process of cutting out extra material. In the context of computer graphics, clipping is a method to selectively enable or disable rendering operations within a defined region of interest.

6. For a 2d transformation viewing, in how many ways a clipping algorithm can be applied?

- a) 3
- b) 2

- c) 1
- d) 5

[View Answer](#)

Answer: b

Explanation: Clipping algorithm can be applied in two ways for 2d transformation viewing. Two ways in which clipping algorithms can be applied are- 1) world co-ordinate clipping. 2) viewport clipping.

7. Which of the following is NOT a type of clipping algorithm used on the raster system?

- a) line clipping
- b) point clipping
- c) area clipping
- d) solid clipping

[View Answer](#)

Answer: d

Explanation: Since clipping is done in 2 dimensional viewing and solid is a 3 dimensional object so clipping algorithm can't be applied on a solid object. Instead of solid clipping, there is another type of clipping algorithm known as curve clipping.

8. For a point to be clipped, which of the following conditions must be satisfied by the point?

- a) $xw_{\min} < x < xw_{\max}$
- b) $xw_{\min} = x = xw_{\max}$
- c) $xw_{\min} > x > xw_{\max}$
- d) $yw_{\min} = y = yw_{\max}$

[View Answer](#)

Answer: c

Explanation: A point P(x,y) is NOT clipped if x is more than the minimum value of x and less than the maximum value of x. Mathematically, it can be written as " $xw_{\min} \leq x \leq xw_{\max}$ ".

9. For a point to be clipped, which of the following conditions must be satisfied by the point?

- a) $yw_{\min} < y < yw_{\max}$
- b) $yw_{\min} > y > yw_{\max}$
- c) $yw_{\min} = y = yw_{\max}$
- d) $xw_{\min} < x < xw_{\max}$

[View Answer](#)

Answer: b

Explanation: A point P(x,y) is NOT clipped if y is more than the minimum value of y and less than the maximum value of y. Mathematically, it can be written as " $yw_{\min} \leq y \leq yw_{\max}$ ".

10. Which type of clipping is used to clip character strings?

- a) text clipping
- b) line clipping
- c) sentence clipping

d) word clipping

[View Answer](#)

Answer: a

Explanation: Text clipping is the algorithm which is used to clip character strings. It depends on the methods which are used to generate original characters.

11. In polygon clipping, line clipping algorithms can be used.

a) True

b) False

[View Answer](#)

Answer: a

Explanation: Polygon is a two dimensional shape formed by straight lines. So we can conclude, polygon's basic components are lines, hence line clipping algorithm can be used for polygon clipping.

Computer Graphics Questions & Answers – Window to Viewport Coordinate Transformation

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This set of Computer Graphics Interview Questions and Answers for freshers focuses on “Window to Viewport Coordinate Transformation”.

1. The object space or the space in which the application model is defined is called

a) World co-ordinate system

b) Screen co-ordinate system

c) World window

d) Interface window

[View Answer](#)

Answer: a

Explanation: World Coordinate System also called as WCS is any coordinate systems that describe the physical coordinates associated with a data array. They also used for an astronomical image, or for determining the wavelength scale for a spectrum.

2. What is the name of the space in which the image is displayed?

a) World co-ordinate system

b) Screen co-ordinate system

c) World window

d) Interface window

[View Answer](#)

Answer: b

Explanation: The coordinate system of the screen is a Cartesian coordinate system. The origin (0,0) is at the top left of the screen. Point is denoted by (x,y), where x is x co-ordinate and y is y co-ordinate.

3. What is the rectangle in the world defining the region that is to be displayed?

- a) World co-ordinate system
- b) Screen co-ordinate system
- c) World window
- d) Interface window

[View Answer](#)

Answer: c

Explanation: The world window specifies which part of the window needs to be drawn. It also defines which part of the window should be drawn and which part outside the window should not be drawn and should be clipped away.

4. The window opened on the raster graphics screen in which the image will be displayed is called _____

- a) World co-ordinate system
- b) Screen co-ordinate system
- c) World window
- d) Interface window

[View Answer](#)

Answer: d

Explanation: In common words, it is termed as a Graphic user interface. It allows users to interact with electronic devices through graphical icons and visual indicators such as secondary notation.

5. The process of mapping a world window in World Coordinates to the Viewport is called Viewing transformation.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: The viewing transformation is the operation of computer graphics in which the maps are the perspective view of an object in world coordinates into a physical device's display space.

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Advanced C Programming

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Advanced C - Syllabus

- The C Language
- C Program Compilation
- Execution Process
- Tokens of C Program
- C Instructions
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- Identifiers and Keywords
- Primitive Data Types
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- Structures – Declaration & Type
- Accessing Elements of Structure
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- Compiler Memory Allocation for Data-types
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- Union – Data Corruption
- Practical Usage of Unions
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- Printing every byte of an Integer
- Enumeration
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- Practical example of Typedef Usage
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- Bit-Fields in Structure
- Practical examples of Bitfield Usage
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C Data Types – Bits & Bytes

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Memory Allocation (C Data Types)

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6. The scale factor of viewport transformation for x co-ordinate is _____

- a) $S_x = (sv_{max} - sv_{min}) / (sw_{max} - sw_{min})$
- b) $S_x = (sv_{max} - sv_{min}) / (sw_{max} + sw_{min})$
- c) $S_x = (sv_{min} - sv_{max}) / (sw_{max} - sw_{min})$
- d) $S_x = (sv_{max} + sv_{min}) / (sw_{max} - sw_{min})$

[View Answer](#)

Answer: a

Explanation: The mapping or transformation involves developing formulas that start with a point in the world window, say (x_w, y_w) . The formula is used to produce a corresponding point in viewport coordinates, say (x_v, y_v) . So after keeping it proportional in 'x' co-ordinate, we get, $(sv_{max} - sv_{min}) / (sw_{max} - sw_{min})$.

7. The scale factor of viewport transformation for x co-ordinate is _____

- a) $S_y = (sv_{max} + sv_{min}) / (sw_{max} + sw_{min})$
- b) $S_y = (sv_{max} - sv_{min}) / (sw_{max} + sw_{min})$
- c) $S_y = (sv_{max} - sv_{min}) / (sw_{max} - sw_{min})$
- d) $S_y = (sv_{max} + sv_{min}) / (sw_{max} - sw_{min})$

[View Answer](#)

Answer: c

Explanation: The mapping or transformation involves developing formulas that start with a point in the world window, say (x_w, y_w) . The formula is used to produce a corresponding point in viewport coordinates, say (x_v, y_v) . So after keeping it proportional in 'y' co-ordinate, we get, $(sv_{max} - sv_{min}) / (sw_{max} - sw_{min})$.

8. Panning is a technique in which users can change the size of the area to be viewed in order to see more detail or less detail.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: The technique in which users can change the size of the area to be viewed in order to see more detail or less detail is called 'Zooming'. Panning means sliding the camera.

9. Drawing of number of copies of the same image in rows and columns across the interface window so that they cover the entire window is called _____

- a) Roaming
- b) Panning
- c) Zooming
- d) Tiling

[View Answer](#)

Answer: d

Explanation: Drawing of number of copies of the same image in rows and columns across the interface window so that they cover the entire window is called 'tiling'. To achieve tiling in computer graphics, the window remains static and the viewport is changed many times.

10. By changing the dimensions of the viewport, the _____ and _____ of the objects being displayed can be manipulated.

- a) Number of pixels and image quality
- b) X co-ordinate and Y co-ordinate
- c) Size and proportions
- d) All of these

[View Answer](#)

Answer: c

Explanation: By changing the dimensions of the viewport, the size and proportions of the objects being displayed can be manipulated, this leads to the zooming effect of the image by successively mapping different dimensioned clipping windows on a fixed sized viewport.

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Computer Graphics Questions & Answers – Clipping Operations

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This set of Computer Graphics Multiple Choice Questions & Answers (MCQs) focuses on "Clipping Operations".

1. What is the primary use of clipping in computer graphics?

- a) adding graphics
- b) removing objects and lines
- c) zooming
- d) copying

[View Answer](#)

Answer: b

Explanation: The primary use of clipping in computer graphics is to remove objects, lines, or line segments that are outside the viewing pane.

2. A polygon can be clipped using clipping operations.

a) True

b) False

[View Answer](#)

Answer: a

Explanation: A polygon can also be clipped by specifying the clipping window. Sutherland Hodgeman polygon clipping algorithm is used for polygon clipping.

3. Which vertex of the polygon is clipped first in polygon clipping?

a) top right

b) bottom right

c) bottom left

d) top left

[View Answer](#)

Answer: d

Explanation: In polygon clipping, first the polygon is clipped against the left edge of the polygon window to get new vertices of the polygon. So, it is the top left which is clipped first.

4. How many methods of text clipping are there?

a) 5

b) 4

c) 3

d) 2

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Answer: c

Explanation: There are three methods for text clipping which are –

1) All or none string clipping 2) All or none character clipping 3) Text clipping.

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| <ul style="list-style-type: none"> • The C Language • C Program Compilation • Execution Process • Tokens of C Program • C Instructions • Constants, Variables • Identifiers and Keywords • Primitive Data Types • Structures – The Definition • Structures – Declaration & Type • Accessing Elements of Structure • Range of Signed/Unsigned Data-types • Efficient way of Printing Pointer • Compiler Memory Allocation for Data-types • Compiler Memory Allocation for Structures | <ul style="list-style-type: none"> • Data-type Alignments • Compiler Memory Allocation for Unions • Union – Data Corruption • Practical Usage of Unions • Practical Usage of Bitfields • Bitfields Overflow • Printing every byte of an Integer • Enumeration • Typedef Statements • Practical example of Typedef Usage • typedef'ing a Function Pointer • Bit-Fields in Structure • Practical examples of Bitfield Usage • Structure Padding & Pitfalls • Programming Model & Memory Size |
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C Data Types – Bits & Bytes

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Memory Allocation
(C Data Types)

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5. A bitmap is collection of _____ that describes an image.

- a) bits
- b) colors
- c) algorithms
- d) pixels

[View Answer](#)

Answer: d

Explanation: A bitmap is a collection of pixels that describe an image. It is a type of computer graphics that the computer uses to store and display pictures.

6. We can change the size or resize the bitmap image.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: We can't resize the bitmap image. When the bitmap image is resized, the image pixels get distorted. It is one of the main disadvantages of the bitmap.

7. In line clipping, the portion of line which is _____ of window is cut and the portion that is _____ the window is kept.

- a) outside, inside
- b) inside, outside
- c) exact copy, different
- d) different, an exact copy

[View Answer](#)

Answer: a

Explanation: Line clipping follows the same algorithm that is in the case of point clipping. So, in line clipping also, we will cut the portion of the line which is outside of the window and keep only the portion that is inside the window.

8. 'Skala' is an example of which type of clipping?

- a) curve clipping
- b) point clipping
- c) polygon clipping

d) line clipping

[View Answer](#)

Answer: d

Explanation: Skala is a type of clipping operation which can be used for a line or line-segment clipping against a rectangular window, as well as against a convex polygon. Its algorithm is based on homogenous co-ordinates and duality.

9. 'Vatti' clipping algorithm is used in _____

- a) curve clipping
- b) point clipping
- c) polygon clipping
- d) line clipping

[View Answer](#)

Answer: a

Explanation: Vatti is used in polygon clipping. It allows clipping of any number of arbitrarily shaped subject polygons. It can also be used to clip any number of arbitrarily shaped polygons.

10. The process of removal of hidden surfaces is termed as _____

- a) clipping
- b) copying
- c) culling
- d) shorting

[View Answer](#)

Answer: c

Explanation: An area which is related to the visible surface determination (VSD) is called culling. 'Viewing frustum culling' and 'Backface culling' are examples of some culling algorithms.

Computer Graphics Questions & Answers – Cohen-Sutherland Line Clipping

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This set of Computer Graphics Questions and Answers for Experienced people focuses on "Cohen-Sutherland Line Clipping".

1. Cohen-Sutherland clipping is an example of _____

- a) polygon clipping
- b) text clipping
- c) line clipping

d) curve clipping

[View Answer](#)

Answer: c

Explanation: It is a type of algorithm which is used for line clipping or in other words it is line clipping algorithm. Other examples of line clipping algorithms are a Liang-Barsky algorithm and Cyrus-Beck algorithm.

2. The Cohen-Sutherland algorithm divides the region into _____ number of spaces.

a) 8

b) 6

c) 7

d) 9

[View Answer](#)

Answer: d

Explanation: The Cohen-Sutherland algorithm divides a two-dimensional space into 9 regions and then efficiently determines the lines and portions of lines that are visible. The portions are visible in the central region of interest.

3. What is the name of the small integer which holds a bit for the result of every plane test?

a) setcode

b) outcode

c) incode

d) bitcode

[View Answer](#)

Answer: b

Explanation: A small integer holding a bit for the result of every plane test failed in clipping is termed as outcode. Primitives may be trivially rejected if the bitwise of all its vertices outcodes is non zero.

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4. An outcode can have _____ bits for two-dimensional clipping and _____ bits for three-dimensional clipping.

a) 4,6

b) 6,8

c) 2,4

d) 1,3

[View Answer](#)

Answer: a

Explanation: The outcode will have 4 bits for two-dimensional clipping, or 6 bits in the three-dimensional case. The first bit is set to 1 if the point is above the viewport. The bits in the 2D outcode represent: top, bottom, right, left.

5. The centre region of the screen and the window can be represented as _____

a) 0000

- b) 1111
- c) 0110
- d) 1001

[View Answer](#)

Answer: a

Explanation: In any co-ordinate system, the origin is the centre of the various axis and is represented as (0,0). So in this case also the origin, or the centre of the window, will be represented as 0000.

6. The Cohen–Sutherland algorithm can be only be used on a rectangular clip window.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: The Cohen–Sutherland algorithm can be used only on a rectangular clip window. For other convex polygon clipping windows, use the Cyrus–Beck algorithm.

7. If both codes are 0000, (bitwise OR of the codes yields 0000) line lies _____ the window.

- a) completely outside
- b) half inside half outside
- c) completely inside
- d) can't say anything

[View Answer](#)

Answer: c

Explanation: To perform the trivial acceptance and rejection tests, we extend the edges of the window to divide the plane of the window into the nine regions. If both codes are 0000 and 1111, (bitwise OR of the codes yields 0000) line lies completely inside the window and outside the window respectively.

8. The 4-bit code of top-left region of the window is _____

- a) 1001
- b) 1100
- c) 0101
- d) 1010

[View Answer](#)

Answer: a

Explanation: The sequence for reading the codes' bits is LRBT (Left, Right, Bottom, Top). Since it is in the top-left corner of the window, hence its code will be 1001.

9. The 4-bit code of bottom-right region of the window is _____

- a) 1001
- b) 0101
- c) 1010

d) 0110

[View Answer](#)

Answer: d

Explanation: The sequence for reading the codes' bits is LRBT (Left, Right, Bottom, Top). Since it is in the bottom-right corner of the window, hence its code will be 0110.

10. If the logical AND of the endpoint codes is NOT zero, the line can be trivially accepted.

a) True

b) False

[View Answer](#)

Answer: b

Explanation: Once the codes for each endpoint of a line are determined, the logical AND operation of the codes determines if the line is completely outside of the window. If the logical AND of the endpoint codes is not zero, the line can be trivially rejected and if it is zero, then only it is accepted.

11. The logical _____ of the endpoint codes determines if the line is completely inside the window.

a) AND

b) OR

c) NOT

d) NOR

[View Answer](#)

Answer: b

Explanation: The logical OR of the endpoint codes determines if the line is completely inside the window. If the logical OR is zero, the line can be trivially accepted. For example, if the endpoint codes are 0000 and 0000, the logical OR is 0000 – the line can be trivially accepted.

Computer Graphics Questions & Answers – Liang-Barsky Line Clipping

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This set of Computer Graphics Multiple Choice Questions & Answers (MCQs) focuses on “Liang-Barsky Line Clipping”.

1. Liang–Barsky algorithm is a _____ clipping algorithm.

a) circle

b) text

c) line

d) pixel

[View Answer](#)

Answer: c

Explanation: Liang–Barsky algorithm is a line clipping algorithm. The Liang–Barsky algorithm uses the parametric equation of a line for clipping operations.

2. The ideas of the Liang-Barsky algorithm are the same with which algorithm?

- a) Cyrus Beck algorithm
- b) Liang-Chopsky algorithm
- c) Cohen Sutherland algorithm
- d) All have the same

[View Answer](#)

Answer: a

Explanation: The ideas for clipping line of Liang-Barsky and Cyrus-Beck are the same. The only difference is Liang-Barsky algorithm has been optimized for an upright rectangular clip window.

3. Liang Barsky algorithm can be used to clip 3-D lines.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: Liang Barsky algorithm can be used for 1-D lines, 2-D lines, and 3-D line clipping. This algorithm can be used for line clipping of 4-D lines too.

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4. This algorithm uses the _____ equations for a line and solves four inequalities.

- a) linear
- b) quadratic
- c) cubic
- d) parametric

[View Answer](#)

Answer: d

Explanation: This algorithm uses the parametric equations for a line and solves four inequalities to find the range of the parameter for which the line is in the viewport.

5. The Liang-Barsky algorithm is more efficient than the Cohen Sutherland algorithm.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: Liang–Barsky clipping algorithm does as much testing as possible before computing line intersections, hence it is much more efficient than others.

6. When the line is parallel to the boundaries then what is the value of p_k ?

- a) $p_k < 0$

- b) $p_k > 0$
- c) $p_k = 0$
- d) $p_k = 1$

[View Answer](#)

Answer: c

Explanation: When $p_k < 0$ line starts exceeding the boundary while if $p_k > 0$ line is bounded inside the boundary. When the line is parallel then $p_k = 0$.

7. Which type of arithmetic is used in Liang Barsky algorithm?

- a) simple arithmetic operations
- b) floating point arithmetic
- c) fixed point arithmetic
- d) logarithmic operations

[View Answer](#)

Answer:b

Explanation: Liang and Barsky have created an algorithm that uses floating-point arithmetic but finds the appropriate endpoints with at most four computations with use of parametric equations.

8. When $p_k < 0$, then the line is _____

- a) parallel to the boundaries
- b) exceeding the boundaries
- c) bounded inside the boundaries
- d) can't say

[View Answer](#)

Answer: b

Explanation: When $p_k < 0$ line starts exceeding the boundary while if $p_k > 0$ line is bounded inside the boundary. When the line is parallel then $p_k = 0$.

9. How many inequalities are solved in this algorithm?

- a) 3
- b) 2
- c) 1
- d) 4

[View Answer](#)

Answer: d

Explanation: Liang-Barsky line clipping algorithm solves 4 inequalities to find the range of the parameter for which the line is in the intersection with the rectangle.

10. What is the relative speed improvement over Cohen-Sutherland algorithm for 2-D lines?

- a) 40%
- b) 50%
- c) 70%

d) 36%

[View Answer](#)

Answer: d

Explanation: The relative speed improvement over Sutherland-Cohen algorithm are: – 36% for 2D lines, 40% for 3D lines, 70% for 4D lines.

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Computer Graphics Questions & Answers – Nicholl-Lee-Nicholl Line Clipping

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This set of Computer Graphics MCQs focuses on “Nicholl-Lee-Nicholl Line Clipping”.

1. Cohen Sutherland clipping algorithm computes _____ number of intersections than NLN line clipping.

- a) more
- b) less
- c) same
- d) can't be predicted

[View Answer](#)

Answer: a

Explanation: One of the problems common to both the Cohen-Sutherland and the Liang-Barsky algorithm is that more intersections are computed than necessary.

2. Liang-Barsky clipping algorithm computes _____ number of intersections than NLN line clipping.

- a) more
- b) less
- c) same
- d) can't be predicted

[View Answer](#)

Answer: a

Explanation: One of the problems common to both the Cohen-Sutherland and the Liang-Barsky algorithm is that more intersections are computed than necessary.

3. What is full form of NLN line clipping algorithm?

- a) Nicholl-Liang-Nicholl algorithm
- b) Nicholai-Liang-Nicholl algorithm
- c) Nicholai-Lee-Nicholl algorithm

d) Nicholl-Lee-Nicholl algorithm

[View Answer](#)

Answer: d

Explanation: The full form of NLN clipping algorithm is Nicholl-Lee-Nicholl algorithm. It is a fast method of clipping.

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4. A polygon can be clipped by using the Nicholl-Lee-Nicholl algorithm.

a) True

b) False

[View Answer](#)

Answer: b

Explanation: The Nicholl–Lee–Nicholl algorithm is a fast line clipping algorithm that reduces the chances of clipping a single line segment multiple times.

5. The area around the clipping window is divided into a number of different

a) pixels

b) squares

c) areas

d) lines

[View Answer](#)

Answer: c

Explanation: The area around the clipping window is divided into a number of different areas, depending on the position of the initial point of the line to be clipped.

6. In how many areas the initial point should be present?

a) 3

b) 5

c) 2

d) 8

[View Answer](#)

Answer: a

Explanation: The initial point should be in three predetermined areas; so that the line may have to be translated or rotated to bring it into the desired region.

7. These areas are given names depending on the location of _____

a) endpoints

b) initial points

c) intermediate points

d) intersection points

[View Answer](#)

Answer:b

Explanation: These areas are then designated as L, LT, LB, or TR, depending on the location of the initial point.

8. What is the denotation of a ray if it intersects the top boundary?

- a) L
- b) T
- c) P
- d) B

[View Answer](#)

Answer: b

Explanation: T – ray intersects top boundary; LT – ray intersects left and top boundary.

9. What is the denotation of a ray if it intersects the top and right boundary?

- a) RT
- b) TR
- c) LR
- d) LT

[View Answer](#)

Answer: b

Explanation: R – ray intersects right boundary; TR – ray intersects top and right boundary.

10. The division of area is affected by the position of endpoints.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: The regions are determined by the property that, no matter where in the region the second point (endpoint) is, the segment will have to be intersected with the same boundaries of the window.

Computer Graphics Questions & Answers – Line Clipping Using Non Rectangular Clip Windows

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This set of Computer Graphics test focuses on “Line Clipping Using Non Rectangular Clip Windows”.

1. Which method of clipping is based on duality?

- a) Skala
- b) Sutherland clipping

- c) Liam Barsky method
- d) NLN clipping

[View Answer](#)

Answer: a

Explanation: Skala is a method of clipping whose algorithm is based on homogeneous coordinates and duality.

2. Which method of clipping is used against convex polygon?

- a) Lg N clipping algorithm
- b) Skala
- c) NLN clipping
- d) Sutherland clipping

[View Answer](#)

Answer: b

Explanation: Skala can be used for a line or line-segment clipping against a rectangular window, as well as against a convex polygon.

3. Which algorithm classifies vertices against the given line?

- a) P algorithm
- b) NLN clipping algorithm
- c) Skala
- d) O algorithm

[View Answer](#)

Answer: d

Explanation: O algorithm classifies vertices against the given line in the implicit form $p: ax + by + c = 0$. Another name of O algorithm is Lg N algorithm.

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4. O algorithm is also known as _____

- a) Lg N algorithm
- b) Lg P algorithm
- c) Lg M algorithm
- d) Lg O algorithm

[View Answer](#)

Answer: a

Explanation: Another name of O algorithm is Lg N algorithm. This algorithm classifies vertices against the given line in the implicit form $p: ax + by + c = 0$.

5. Which type of search can be applied to O algorithm?

- a) interpolation search
- b) binary search
- c) simple search
- d) hexadecimal search

[View Answer](#)

Answer: b

Explanation: Binary search can be applied to O algorithm which leads to run-time complexity.

6. O algorithm is simple and easy to implement.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: Skala is simple and easy to implement whereas O algorithm shows run time complexity.

7. The polygon is assumed to be _____ and vertices are ordered clockwise or anti-clockwise while applying line clipping algorithms.

- a) cylindrical
- b)concave
- c) plane
- d) convex

[View Answer](#)

Answer: d

Explanation: The polygon is assumed to be convex and vertices are ordered clockwise or anti-clockwise while applying line clipping algorithms. Anti-convex polygons are not used.

8. A plane duality is a map from a _____ to its dual plane.

- a) projective plane
- b) incident plane
- c) parallel plane
- d) reference plane

[View Answer](#)

Answer: a

Explanation: A plane duality is a map from a projective plane $C = (P, L, I)$ to its dual plane $C^* = (L, P, I)$; which preserves incidence.

9. Fast clipping algorithm is an example of _____ clipping algorithm.

- a) text
- b) polygon
- c) line
- d) curve

[View Answer](#)

Answer: c

Explanation: Line clipping is the process of removing lines or portions of lines outside an area of interest and fast clipping algorithm is an example of line clipping algorithm.

10. Fast clipping algorithm has similarities with Liam Barsky algorithm.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: Fast clipping algorithm has similarities with Cohen–Sutherland. The start and end positions are classified by which portion of the 9-area grid they occupy, in both of the algorithms.

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Computer Graphics Questions & Answers – Sutherland-Hodgeman Polygon Clipping

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This set of Computer Graphics Questions and Answers for Entrance exams focuses on “Sutherland-Hodgeman Polygon Clipping”.

1. Sutherland-Hodgeman clipping is an example of _____ algorithm.

- a) line clipping
- b) polygon clipping
- c) text clipping
- d) curve clipping

[View Answer](#)

Answer: b

Explanation: The Sutherland–Hodgman algorithm is used for clipping polygons. Cohen-Sutherland is line clipping algorithm.

2. How many polygons are used in this method?

- a) 4
- b) 3
- c) 2
- d) 1

[View Answer](#)

Answer: c

Explanation: Two polygons are used in this algorithm namely clip polygon and subject polygon.

3. Only vertices from the subject polygon that are on the _____ are selected.

- a) lower half
- b) boundary

- c) opaque side
- d) visible side

[View Answer](#)

Answer: d

Explanation: Only vertices from the subject polygon which are on the visible side are selected and rest of the vertices are clipped.

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4. The process is repeated iteratively for each clip polygon side, using the output list from one stage as the input list for the next.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: The process is repeated iteratively for each clip polygon side, using the output list from one stage as the input list for the next. When the process is completed, a new polygon is generated.

5. We can correctly clip a polygon by processing the polygon boundary as a whole against each _____

- a) side wall
- b) top edge
- c) window edge
- d) bottom edge

[View Answer](#)

Answer: c

Explanation: We can correctly clip a polygon by processing the polygon boundary as a whole against each window edge which can be accomplished by processing all polygon vertices against each rectangle.

6. How many edges of the clipping are/is present in 2D?

- a) 1
- b) 2
- c) 3
- d) 4

[View Answer](#)

Answer: d

Explanation: If the algorithm is done in 2D, we have 4 edges of the clipping area. Left edge, right edge, top edge and bottom edge.

7. If we used Left->Right->Up->Bottom, the final output will be the vertex list outputted by the _____ edge.

- a) left edge
- b) right edge

- c) top edge
- d) bottom edge

[View Answer](#)

Answer: d

Explanation: If we used Left->Right->Up->Bottom, the final output will be the vertex list outputted by the bottom edge. The final result is given by the last edge which is a bottom edge in this case.

8. If the subject polygon is concave at vertices outside the clipping polygon, the new polygon may have coincident edges.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: If the subject polygon was concave at vertices outside the clipping polygon, the new polygon may have coincident edges. The result will be the same in case of overlapping edges too.

9. In a convex polygon, each of the interior angles is less than ____ degrees.

- a) 90
- b) 180
- c) 360
- d) 45

[View Answer](#)

Answer: b

Explanation: A convex polygon is a simple polygon in which no line segment between two points on the boundary ever goes outside the polygon and interior angles are less than 180 degrees.

10. One of the drawbacks of Sutherland- Hodgeman algorithm is that it can't produce _____ areas.

- a) connected
- b) multiple
- c) discrete
- d) circular

[View Answer](#)

Answer: a

Explanation: The Sutherland-Hodgeman algorithm is not able to produce connected areas. For connected areas, Weiler-Atherton Algorithm is used.

[« Prev](#)

This section of our 1000+ Computer Graphics multiple choice questions focuses on Anti Aliasing.

1. The distortion of information due to low-frequency sampling is known as

- a) Sampling
- b) Aliasing
- c) Inquiry function
- d) Anti-aliasing

[View Answer](#)

Answer: b

Explanation: The distortion of information is called aliasing.

2. To avoid losing information from periodic objects we need

- a) Sampling frequency twice
- b) Nyquist sampling frequency
- c) Both a or b
- d) Neither a nor b

[View Answer](#)

Answer: c

Explanation: Because nyquist sampling frequency means sampling frequency twice.

3. Nyquist sampling frequency formula is

- a) $f_s = 2f_{max}$
- b) $f_s = 2f_{min}$
- c) $f_s = f_{max}$
- d) $f_s = f_{min}$

[View Answer](#)

Answer: a

Explanation: None.

4. The sampling of object characteristic at a high resolution and displaying the result at a lower resolution is called?

- a) Super-sampling
- b) Post-filtering
- c) Anti-aliasing
- d) a or b

[View Answer](#)

Answer: d

Explanation: Super-sampling is also called Post-filtering by computing intensities and combines results to obtain the pixel intensities.

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5. Anti-aliasing by computing overlap areas is referred to as

- a) Area-sampling
- b) Super-sampling
- c) Pixel phasing
- d) Only b

[View Answer](#)

Answer: a

Explanation: The intensity of pixel as a whole is determined without calculating sub-pixel intensity.

6. Area-sampling is also known as

- a) Pre-filtering
- b) Pixel phasing
- c) Post-filtering
- d) Anti-aliasing

[View Answer](#)

Answer: a

Explanation: None.

7. Raster objects can also be anti-aliased by shifting the display location of pixel areas is known as

- a) Super-sampling
- b) Pixel shaping
- c) Pixel phasing
- d) Any of these

[View Answer](#)

Answer: c

Explanation: This technique is applied by micro-positioning the electron beam in relation to object geometry.

8. If we want to use more intensity levels to anti-alias the line, then

- a) We increase the number of sampling positions
- b) We decrease the number of sampling positions
- c) We increase the number of pixels
- d) Only c

[View Answer](#)

Answer: a

Explanation: We increase the number of sampling positions across each pixel to use more intensity levels.

9. The procedure that increases the number of intensity levels for each pixel to total number of sub-pixels is

- a) Area-sampling
- b) Anti-aliasing

- c) Super-sampling procedure
- d) Only c

[View Answer](#)

Answer: d

Explanation: The super-sampling procedure increases the number of intensity levels for each pixel to total number of sub-pixels.

10. For a 45% line, the line path is_____ on the polygon area.

- a) Horizontal
- b) Centered
- c) Vertical
- d) Any of these

[View Answer](#)

Answer: b

Explanation: The line path is centered on the polygon area only if a line is 45%.

11. An array of values specifying the relative importance of sub-pixel is referred as_____ of sub-pixel weights.

- a) Sub-mask
- b) Mask
- c) Pixel phasing
- d) Pixel weighting

[View Answer](#)

Answer: c

Explanation: None.

12. The technique that is more accurate method for anti-aliasing lines is

- a) Filtering
- b) Area-sampling
- c) Super-sampling
- d) None

[View Answer](#)

Answer: a

Explanation: In this technique we can imagine a continuous weighting surface covering the pixel.

13. Super-sampling methods can be applied by

- a) Sub-dividing the total area
- b) Determining the number of sub-pixels inside the area
- c) Both a and b
- d) Only b

[View Answer](#)

Answer: c

Explanation: Super-sampling methods can be applied by sub-dividing the total area and determining the number of sub-pixels inside the area boundary.

14. Another method for determining the percentage of pixel area within a boundary is

- a) Mid-print algorithm
- b) Mid-point algorithm
- c) Pixel intensity
- d) By using inquiry functions

[View Answer](#)

Answer: b

Explanation: This algorithm selects the next pixel along a line by determining which of 2 pixels is closer to the line between 2 pixels.

15. What is the use of Coherence techniques along and between scan lines?

- a) To simplify the calculations
- b) To determine the area edges
- c) To find polygon region
- d) To correct interior area

[View Answer](#)

Answer: a

Explanation: Coherence techniques are used along and between scan lines to simplify the calculations.

Computer Graphics MCQ Questions and Answers pdf. These Multiple Choice Question with Answer are useful for the preparation of IT exams.

1) _____ refers to the shutting off the electron beam as it returns from the bottom of the display at the end of a cycle to the upper left-hand corner to start a new cycle.

- (a) Horizontal retraces blanking
- (b) Diagonal retrace blanking
- (c) Vertical retrace blanking**
- (d) None of the above

2) Cartesian coordinate system can be

- (a) Left-handed
- (b) Right-handed
- (c) Both a and b**
- (d) None of the above

3) Each bytes is composed of _____ bits

- (a) 2
- (b) 4
- (c) 8**
- (d) 16

4) The majority of _____ systems assign 1 bit in the memory map to one pixel on the display.

- (a) Monochromatic**
- (b) Dichromatic
- (c) Polychromatic
- (d) Tri-chromatic

5) There are _____ steps involved in converting Cartesian coordinates

- (a) 1
- (b) 2
- (c) 3
- (d) 4**

6) Most display terminals provide the uses with _____ keyboard.

- (a) Alphabetic
- (b) Numeric
- (c) Alphanumeric**
- (d) All of the above

7) Two types of graphical interaction are-

- (a) Partitioning and positioning
- (b) Partitioned and painting
- (c) Positioning and pointing**
- (d) None of the above

8) CRT raster display can be considered as a matrix of _____ calls

- (a) Concrete
- (b) Discrete**
- (c) Successive
- (d) Perceived

9) The process of determining which pixels will provide a better approximation to the desired line is known as_____.

- (a) Scan conversion

(b) Randomization

(c) Rasterization

(d) Recreation

10) Rasterization combined with the process of rendering the picture scan line order is known as _____

(a) Scan conversion

(b) Randomization

(c) Recreation

(d) None of the above

11) One technique for obtaining a raster zed straight line is to solve the governing __ equation.

(a) Linear

(b) Drastic

(c) Integrated

(d) Differentials

12) Basic methods of projection are _____ and _____ .

(a) Parallel and perspective

(b) Parallel and perceptive

(c) Perceptive and perspective

(d) None of the above

13) In viewing / specifying any objective the first viewing parameter is _____ & next is _____

a) view reference point, view plane normal vector

b) View plane normal vector, the View reference point

c) Both a & b

d) None of these

14) Equation for e in Brasenham's algorithm is.

(a) $e = dy/dx - 1/2$

(b) $e = 2dy - dx$

(c) $e = dy - dx/2$

(d) $e = dy - 2dx$

15) Equation for e in integer Brasenham's algorithm is.

(a) $e = dy/dx - 1/2$

(b) $e = 2dy - dx$

- (c) $e = dy - dx/2$
- (d) $e = dy - 2dx$

16) The First octant in Brasenham's algorithm is –

- (a) $dy > dx$
- (b) $dy \geq dx$
- (c) $dx \leq dy \leq dx$**
- (d) $dx \leq dy < dx$

17) Brasenham's circle algorithm, it is desirable to perform the calculation necessary to find the scan-converted points with only.

- (a) Integer addition
- (b) Subtraction
- (a) Multiplication
- (c) All of the above**

18) The best approximation in Brasenham's circle algorithm of the true circle will be described by those pixels in the raster that falls the _____ distance from the true circle.

- (a) Least**
- (b) Far
- (c) Both a and b
- (d) None of the above

19) Good graphics programming avoids the use of _____ operations whenever possible.

- (a) Multiplications
- (b) Division
- (c) Floating point**
- (d) Integer

20) Many closed _____ are simple polygons

- (a) Counters
- (b) Contours**
- (c) Controls
- (d) Canters

21) The simplest methods of filling a polygon is to examine _____ in the raster.

- (a) 1 pixel
- (b) 2 pixel
- (c) 5 pixel
- (d) Every pixel**

22) The bounding box is the _____ that contains the polygon.

(a) Smallest rectangle

(b) Largest rectangle

(c) Smallest triangle

(d) Smallest square

23) Expect at boundary edges, adjacent pixels are likely to have some characteristics. This property is referred to as _____.

(a) Coherence

(b) Special coherence

(c) Spatial coherence

(d) None of the above

24) For a _____ graphics device adjacent pixels on a scan line are likely to have the same characteristics.

(a) Random scan

(b) Raster scan

(c) CRT

(d) None of the above

25) What is scan line coherence?

(a) Adjacent pixels on a scan line are likely to have different characteristics

(b) Non-adjacent pixels on a scan line are likely to have different characteristics

(c) Adjacent pixels on a scan line are likely to have the same characteristics

(d) None of the above

26) The characteristics of pixels on a given scan line change only where a polygon ____ scan line

(a) Intersects

(b) Unions

(c) Differences

(d) All of the above

27) Efficient algorithms for scan –converting solid area polygons can be developed. These are called

(a) Unordered edge list algorithm

(b) Ordered edge list algorithm

(c) A lumbered edge list algorithm

(d) All of the above

28) The efficiency of the algorithm depends on the _____.

- (a) Efficiency of searching
- (b) Efficiency of time
- (c) Efficiency of sorting**
- (d) None of the above

29) The ordered edge list algorithm is _____.

- (a) Powerful
- (b) Weak
- (c) Extremely weak
- (d) Very powerful**

30) The edge flag algorithm is a _____ process

- (a) One-step
- (b) Three-step**
- (c) Two-step
- (d) Four-step

31) Using the half scan line convention for each edge interesting the polygon, set the leftmost pixel whose endpoint lies to the right of the intersection. This is a procedure for-

- (a) Fill
- (b) Counter
- (c) Contour outline**
- (d) None of the above

32) The disadvantage of both the edge fill and fence fill algorithm is the number of pixels addressed

- (a) More than once
- (b) Not even once
- (c) Exactly once**
- (d) None of the above

33) The edge fill, fence fill and edge flag algorithm are _____ to simple polygons.

- (a) Limited
- (b) Not limited**
- (c) Both a and b
- (d) None of the above

34) The First step of edge –flag algorithm is

- (a) Fill

(b) Sean line

(c) Contour outline

(d) None of the above

35) The edge flag algorithm lists each pixel ____

(a) At least once

(b) Almost once

(c) 1

(d) None

36) A simple seed fill algorithm for a boundary the defined region can be developed using a _____.

(a) Queue

(b) Linked list

(c) Dequeue

(d) Stack

37) In a stack values may be placed or removed _____.

(a) Sequentially

(b) Randomly

(c) Directly

(d) None of the above

38) A push down stack is _____.

(a) FIFO

(b) LIFO

(c) LIFO

(d) None of the above

39) In simple seed fill algorithm _____ function is used for placing a pixel on the stack.

(a) Seed

(b) Push

(c) POP

(d) None of the above

40) In simple seed fill algorithm _____ function is used for removing a pixel from the stack.

(a) Seed

(b) Push

(c) Pop

(d) All of the above

41) ____ is the process of extracting a portion of the database, is fundamental to several aspects of computer graphics.

(a) Projection

(b) Clipping

(c) Rotation

(d) Translation

42) Clipping algorithm can be implemented in –

(a) Software

(b) Both a and b

(c) Hardware

(d) None of the above

43) If both the end points of a line are exterior to the window then,

(a) It is completely exterior to the window

(b) The line is not necessarily complete exterior of the window

(c) Both a and b

(d) None of the above

44) If a and b are endpoints of a line, then an algorithm for identifying completely visible and most invisible lines might be:

(a) Visibility algorithm

(b) Simple visibility algorithm

(c) Complex visibility algorithm

(d) None of the above

45) Endpoint code checking can easily be implemented when _____ are available.

(a) Byte manipulation

(b) Megabyte manipulation

(c) Bit manipulation

(d) None of the above

46) Midpoint subdivision algorithm woods direct calculation by performing

(a) Sequential search

(b) Direct search

(c) Binary search

(d) None of the above

47) In hardware division by 2 can be accomplished by shifting each bit to the –

(a) Right

(b) Left

(c) Up

(d) Down

48) Polygon clipping operator on

(a) Vertices

(b) Edges of the polygon

(c) Both a and b

(d) None of the above

49) The object is held stationary while the coordinate system is moved relative to the object is called

(a) Geometric Transformation

(b) Coordinate transformation

(c) Translation

(d) Rotation

50) The object is held stationary while the coordinates system is moved relation to the object is called.

(a) Geometric transformation

(b) Coordinate transformation

(c) Translation

(d) Rotation

51) The object is displaced a given distance and direction its original position is called

(a) Translation

(b) Rotation

(c) Transformation

(d) Scaling

52) _____ is the process of expanding or compressing the dimensions of an object.

(a) Translation

(b) Rotation

(c) Transformation

(d) Scaling

53) A scaling constant ____ indicates an expansion of length.

(a) 1

- (b) < 1
- (c) $= 1$
- (d) ≥ 1

54) A scaling constant _____ indicates, compression of lengthy-

- (a) < 1**
- (b) $= 1$
- (c) ≥ 1
- (d) None of these

55) If both scaling constants have the same value S , the scaling transformation is said to be

- (a) Homogeneous**
- (b) Heterogeneous
- (c) Both a and b
- (d) None of the above

56) In Perspective Projection eye of the artist is placed at the

- (a) Left of projection
- (b) Right of projection
- (c) Top of projection
- (d) Center of projection**

57) Which of the following is not a perspective anomaly

- (a) Foreshortening
- (b) Vanishing points
- (c) View confusion
- (d) Topological Creation**

58) Shift Register is operated in _____ fashion i.e. similar to _____

- a) FIFO, Queue**
- b) FILO, Stack
- c) LIFO, Stack
- d) None of the above

59) In raster scan display a special area of memory is dedicated to graphics only. This memory area is called _____ & it holds the set of _____ value for all screen points.

- a) Frame Buffer, Intensity**
- b) LUT, Canvas

- c) Canvas, Output
- d) None of the above

60) In the display controller architecture, the _____ allows the CPU to access the frame buffer directly & display controller to access the _____ & there is a separate position to avoid memory conflicts when the CPU & display controller run asynchronously.

a) Memory mapping, CPU memory

- b) Direct Mapping, CPU memory
- c) Indirect mapping, main memory
- d) Memory mapping, a frame buffer.

61) The _____ line is straight but its _____ is not constant.

a) 45°, width

- b) 60°, Height
- c) 30°, length
- d) None of the above

62) In DDA, the rasterized line lies to both side of actual line i.e. algo. is _____ dependent & here end. pt. accuracy is _____

a) rasterization, 90%

b) Orientation, poor

- c) Orientation, good
- d) Conversion, poor

63) The basic principle of Bresenham's Line algorithm is to select the optimum _____ loan to represent a line i.e. increment the value of x or y by one unit depending upon _____ of line.

a) raster, slope

- b) random, intensity
- c) raster, intensity
- d) random, slope.

64) The increase in x or y is determined by examine the distance between locn & nearest pixel. This distance is called _____ or _____

a) Decision variable, error gradient

- b) e, error
- c) Proposition to d1...d2
- d) All of the above

65) The Bresenham's circle drawing algorithm consider _____ way symmetry of the circle to generate it. It plots 1/8th part of the circle i.e. from 90° to _____

a) eight, 45°

b) eight, 180°

c) 16, 45°

d) four, 45°

66) _____ polygon is a polygon in which the line segment joining any two points within the polygon lies completely inside the polygon & its opposite is _____ polygon.

a) Concave, convex

b) Convex, concave

67) Algorithm that fill interior defines region are called _____ algorithm, Those that fill boundary defined region are called _____ algorithm.

a) Flood fill, boundary fill

b) Flood fill, edge fill

c) Boundary fill, edge fill

d) Both a & b

68) Two basic approaches used to fill the polygon are _____ & _____.

a) Seed point, the scan line

b) Raster izaion, scan conversion

c) Seed point, bucket file

d) None of the above

69) _____ give the color of specified pixel & _____ draws the pixel with specified color.

a) get pixel(), put pixel()

b) put pixel(), get pixel()

c) Both a & b

d) None of the above

70) Filling an area with a rectangular pattern is called _____ & relating the area of pattern with the area of primitive is known as _____.

a) Filing, anchoring

b) filing, viewing

c) clipping, viewing

d) anchor, cryptography

71) Horizontal & vertical lines have different thickness then line at an angle. If the thickness of the horizontal /vertical line is t then line drawn at 45° has an average thickness of _____ & unequal line thickness results in unequal _____

- a) $t/\sqrt{3}$, replication
- b) $t/2$, replication
- c) $t/\sqrt{2}$ brightness**
- d) $t/\sqrt{3}$, brightness

72) In _____ method the thickness of the primitive varies with the angle of primitive & varies in opposite way then in pixel _____ method.

- a) Moving pen, replication**
- b) replication, moving the pen
- c) pattern filling, moving the pen
- d) all of the above

73) The process of selecting & viewing the picture with different views is called _____ & a process which divides each element of the picture into its visible & invisible position is called _____.

- a) Windowing, clipping**
- b) anchoring, filling
- c) anchoring, cartography
- d) all of the above

74) The region against which an object is to be clipped is called _____ or _____.

- a) Boundary, edges
- b) Clip window, clipping window**
- c) viewport, window
- d) Both a & b

75) The oldest & most popular line clipping algorithm is ____ & was developed by ____ to speed up the processing

- a) Cohen subdivision algorithm, Ivan Sutherland
- b) Sutherland line clipping algorithm, Den Cohen
- c) Both a & b**
- d) None of the above

76) 4-bit code are called _____ or _____

- a) region code, out code
- b) UDLR code, LRTB code

c) Both a & b

d) None of the above

77) _____ is a generalized line clipping algorithm and is applicable to an arbitrary _____ region.

a) Cyrus Beck, Convex

b) Cohen Sutherland, concave

c) Cyrus Beck, Concave

d) Cohen Sutherland, convex

78) _____ algorithm is not applicable for non-rectangular clipping window. SO we introduced _____ equation of line segment to find the intersection points of a line with the clipping edge.

a) Cohen Sutherland, parametric

b) Cyrus Beck, coordinate

c) Cohen Sutherland, trigonometric

d) Cyrus beck, elliptical

79) Translation is a process of changing _____ of object & scaling is process of changing _____

a) position, shape

b) position, direction

c) size, shape

d) axis, shape

80) Consider line (5,5) to (13,9) Use Bresenham & give the value of full term :

a) $\Delta x=8, \Delta y=4, e=0, m=2$

b) $\Delta x=7, \Delta y=3, e=7, m=3$

c) $\Delta x=6, \Delta y=4, e=1, m=4$

d) None of these

Computer Graphics MCQ Multiple Choice Questions with Answers

1. ___ representation gives the final classification to use computer graphics.

A) Graphical

B) Coordinates

C) Pictorial

D) Characters

2. ___ is done to achieve better image quality either by elevating image contrast levels or by eradicating noise.

A) Image compression

B) Image enhancement

C) Image restoration

D) Image segmentation

3. ___ represents data of certain areas such as geographic maps, weather maps, oceanography charts, population density maps.

A) Animation

B) Simulation

C) Cartography

D) Dimensionality

4. In vector displays beam is deflected from the endpoint to endpoint and the technique is called ___.

A) Raster Scan

B) Random Scan

C) Vector Scan

D) Conversion Scan

5. In controllable interaction user can change the attributes of the ___.

A) Images

B) Widgets

C) Videos

D) Audios

6. Programmer's Hierarchical Interactive Graphics System (PHIGS) supports ___ grouping of 3D primitives called structures.

A) Nested-hierarchical

B) Single-hierarchical

C) Multilevel-hierarchical

D) Single-level- hierarchical

7. ___ is responsible for producing the picture from the detailed descriptions.

A) Graphical System

B) Application model

C) Conceptual model

D) Application program

8. ___ is the separate memory area provided in graphics workstations.

A) System memory

B) Display processor memory

- C) Base memory
- D) Conventional memory

9. The raster-scan generator produces ___ that generate the raster scan.

- A) Pixel values
- B) Deflection beams
- C) Deflection signals**
- D) None of the above

10. To create scenes, images, pictures and also animated pictures ___ acts as a very powerful tool.

- A) Graphics package
- B) Graphics controller
- C) Graphics software**
- D) Graphics card

11. A ___ is used by the video controller to store many entries of pixel values in RGB format.

- A) Dynamic table
- B) Lookup table**
- C) Static Table
- D) All the above

12. ___ can be used in the absence of colour capability of a monitor to set the shades of grey or grayscale for displayed primitives.

- A) Color functions**
- B) Graphics controller
- C) Video controller
- D) Display processor

13. The number of colour choices can be increased by decreasing the number of ___ to the frame colour.

- A) Grayscale
- B) Bits per pixel**
- C) Intensity level
- D) Brightness

14. The ___ controls the x and y address registers which in turn define the memory location to be accessed next.

- A) Frame buffer
- B) Raster scan generator**
- C) Video controller
- D) Random Scan Display Processor

15. ___ method proves to be efficient in the scan-conversion of straight lines.

- A) Raster Algorithm
- B) DDA Algorithm

C) Bresenham's line algorithm

- D) Frame Algorithm

16. ___ is implemented using rotating random-access semiconductor memory.

- A) Peripheral Buffer
- B) Memory Buffer

C) Frame Buffer

- D) IO Buffer

17. ___ algorithm is orientation dependent.

A) DDA

- B) Rasterization
- C) Scan conversion
- D) Bresenham's Line Algorithm

18. ___ equation can be used to find y coordinate for the known x coordinate.

- A) Differential

B) Polynomial

- C) Simultaneously
- D) Binomial

19. The intensity values for all the screen points are held in the ___.

A) Frame buffer

- B) IO buffer
- C) Video controller
- D) Display processor

20. ___ does its own scan conversion and handles all Simple Raster Graphics Package's (SRGP) primitives and attributes directly.

- A) Video controller

B) Display controller

- C) Frame buffer
- D) I/O controller

21. ___ algorithm can be used to draw the circle by defining a circle as a differential equation.

- A) Bresenham's line

B) Digital differential analyzer

- C) Recursive algorithms
- D) Backtracking algorithms

22. Based on the line segment joining any two point's lies, the polygons can be classified as___.

- A) Convex and Concave**
- B) Regular and Irregular
- C) Equilateral and Equiangular
- D) None of the above

23. For a scan line with every polygon side, the use of ___ simplifies the calculation of intersection points.

- A) Primitive's spatical coherence
- B) Coherence properties**
- C) Span coherence properties
- D) Scan-line coherence properties

24. The ___ is the smallest rectangle that contains the polygon.

- A) Cache box
- B) Activex box
- C) Bounding box**
- D) Databox

25. Algorithms that fill the interior, that defines regions are called ___.

- A) Boundary Fill algorithm
- B) Flood Fill algorithm**
- C) Scan line algorithm
- D) Fill area algorithm

26. Which of the following algorithm aims to overcome the difficulties of the seed fill algorithm?

- A) Scan line algorithm**
- B) Boundary fill algorithm
- C) Flood fill algorithm
- D) Line algorithm

27. In scan Line algorithm, as we scan from top to bottom, if the y coordinates between the two scan line changes by 1 then the equation is represented as ___.

- A) $Y_{i+1} = Y_i - 1$**
- B) $Y_{i+1} = Y_i + 1$
- C) $Y_{i-1} = Y_i - 1$
- D) $Y_{i+1} = Y_i / 1$

28. Convex and Concave types of Polygon are classified on the basis of:

- A) Where line segment joining any two points lies entirely within a polygon
- B) Where the line segment joining any two points may not lie completely within the polygon.
- C) Both a & b
- D) Where the line segment joining any two points lies**

29. The region against which an object is to be clipped is called ____.

A) Clip Window

B) Crop Window

C) Cross Section

D) Connecting Window

30. ____ is the procedure used to identify if any portions of a picture are within or outside of a specific region of space.

A) Clipping

B) Copying

C) Conversion

D) Communication

31. ____ method uses small line segments to generate a character.

A) Stroke

B) Signal

C) Crisscross

D) OCR

32. If the endpoints of the line are P5 P6 and the corresponding code is 0001 and 0000, the logical AND code is 0000, then the result is ____.

A) Partially Visible

B) Completely Visible

C) Completely Invisible

D) Error

33. The process of selecting and viewing the picture with a different view is called ____.

A) Windowing

B) Cropping

C) Clipping

D) Filling

34. A method used to test lines for total clipping is equivalent to the ____.

A) Logical AND operator

B) Logical OR operator

C) Logical XOR operator

D) Logical NAND operator

35. A ____ can be clipped by processing its boundary as a whole against each window edge.

A) Rectangle

B) Polygon

C) Octagon

D) Pentagon

36. The process of changing the position of an object from one coordinate location to another in a straight line path is called ___

A) Translation

B) Transformation

C) Transaction

D) Translocation

37. For the axis which does not coincide with the axis of the coordinate, a rotation matrix can be set up as a composite transformation that involves the combinations of translation and the ___ rotations.

A) Cartesian axes

B) Spatial axes

C) Coordinate axes

D) Reflexive axes

38. ___ is the process of mapping coordinates in the display of an image.

A) Viewing transformation

B) Reviewing transformation

C) Scaling transformation

D) Data transformation

39. The inverse of a matrix is another matrix such that when the two are multiplied together to get the___.

A) Transpose the matrix

B) Identity matrix

C) Diagonal matrix

D) Square matrix

40. ___ allow the programmer to define picture that include a variety of transformations.

A) Human-computer information retrieval

B) Graphics systems

C) Software testing

D) Networking

41. The homogeneous coordinate is represented by a ___.

A) Triplet

B) Quadruplet

C) Tetractic

D) None of the above

42. We can obtain a ___ if and only if the determinant of the matrix is nonzero.

A) Row Matrix

B) Inverse matrix

- C) Column Matrix
- D) Rectangular Matrix

43. A ___ is nothing but the film plane in a camera that is positioned and oriented for a particular shot of the scene.

- A) View system
- B) View volume
- C) View plane**
- D) All the above

44. A ___ can be defined by establishing the viewing coordinate system or view reference coordinate system.

- A) View system
- B) View plane**
- C) View volume
- D) All the above

45. The length of the directed line segment between the view plane and the view reference points is referred to as ___.

- A) View reference point
- B) View-distance**
- C) view-up vector
- D) None of the above

46. The mismatch between 3D objects and 2D displays is compensated by introducing ___.

- A) Coordinates
- B) View plane
- C) Projections**
- D) None of the above

47. The process of displaying more than one face of an object using the orthographic projection is known as ___ orthographic projection.

- A) Isometric
- B) Cavalier
- C) Cabinet
- D) Axonometric**

48. In ___ the view planes of the projection planes not normal to a principal axis are used.

- A) Oblique Projection
- B) Cavalier projection
- C) Axonometric orthographic**
- D) Cabinet projection

49. If the direction of the projection is normal then it is called ___.

A) Orthographic parallel projection

B) Oblique parallel projection

C) Perspective Projection

D) Ortho-Oblique Projection

50. In ___ application program describes the objects in terms of primitives and attributes stored in or derived from an application model or data structure.

A) Input pipeline

B) Output pipeline

C) Task pipeline

D) Screen pipeline

51. Computer graphics is an extremely effective medium for communication between ___ and ___.

A) Human beings, Computers

B) Display, Computer

C) Input, Output

D) Virtual reality, Real World

52. Recognition and construction of 3D models of a scene from many 2D images is done in ___ and ___.

A) Scene detection, Auditory scene analysis

B) Visual scene analysis, Computer vision

C) Speech analysis, Computer vision

D) Scene analysis, Computer vision

53. 1. ___ is a tool in interactive graphics used to move objects with respect to a stationary observer or move the viewer around stationary objects.

2. Digital coordinates are converted to analog voltages by the ___.

A) Motion dynamics, vector generator

B) Update dynamics, display generator

C) Structures, Motion dynamics

D) Graphics system, Structures

54. 1. Provides pixel to a desired picture or graphics object

2. Converts continuous picture into discrete pixels.

The above special procedure is named ___.

A) Rasterization

B) Quantization

C) Motion dynamics

D) Update dynamics

55. ___ is the process of digitizing a picture definition given in an application program and stores it in the frame buffer as a set of ___.

A) Scan code, Pixel-intensity images

B) Scan conversion, Pixel-intensity values

C) Scan code, Pixel-intensity values

D) Scan conversion, Pixel-intensity images

56. ___ receives the intensity information of each pixel from ___ and displays them on the screen.

A) Frame buffer, Video controller

B) Video controller, Frame buffer

C) Display coprocessor, Video controller

D) Frame buffer, Display coprocessor

57. Which of the following are the ways of storing colour information in a frame buffer?

1. Can be stored directly in a frame buffer.

2. Color codes can also be stored in the system memory.

3. Color codes can be put as a separate table.

A) Only (1) & (3)

B) Only (3)

C) Only (2) & (3)

D) Only (1)

58. It is the process of digitizing a picture definition given in an application program and store it in the frame buffer as a set of pixel-intensity values. The above statement refers to:

A) Scan conversion

B) Video controller

C) Raster-scan system

D) Lookup table (LUT)

59. 1. It implements a frame buffer.

2. It operates in a FIFO fashion.

3. It is also named Queue.

These are the characteristics of ___.

A) Flip-flop Register

B) Shift Register

C) RS Register

D) Counter Register

60. 1. ___ procedures specify how images are to be modified.

2. ___ procedures specify where the images are to be generated.

A) Command, Conversion

B) Continue, Canvas control

C) Co-occurrence, Conversion

D) CopyPixel, Canvas control

61. The ___ between the output of the shift register and the ___ rate is maintained.

A) Synchronization, Audio Scan

B) Synchronization, Image Scan

C) Synchronization, Video Scan

D) All of the above

62. 1. Includes procedure related to initialize and control the input device.

2. Contains the values returned by the package's sampling.

These are the functions of ___.

A) Input Pipeline

B) Output Pipeline

C) Buffer Pipeline

D) Virtual memory Pipeline

63. 1. Checking the pixel, if it is inside the polygon or outside it.

2. After checking, the pixels inside the polygon are highlighted. This method of highlighting is ___.

A) Flood Fill algorithm

B) Boundary Fill algorithm

C) Scan line algorithm

D) Fill area algorithm

64. 1. ___ exits when all pixels on a span are set to the same value.

2. ___ exists when consecutive scan lines that intersect the rectangle are identical.

A) Span coherence, Primitive's spatical coherence

B) Span coherence, Scanline coherence

C) Coherence, Primitive's spatical coherence

D) Scan-line coherence, Coherence

65. Which of the following are the tasks of the scan line algorithm?

1. Setting of the respective positions between each intersection pair with a specific colour.

2. Sorting of the intersection points from left to right.

3. Find the intersection points of the scan line with the polygon boundary.

A) Only (1), Only (3)

B) Only (2), Only (3)

C) Only (1), Only (2)

D) (1), (2), (3)

66. ___ is a small group of ___ with a fixed colour combination used to fill the particular area in the picture

A) Pattern & Pixels

- B) Picture & Pixels
- C) Tiling pattern & Pictures
- D) Tiling pattern & Pixels

67. If the result is not ___ in the logical AND operation with two endpoint codes, then the line is completely ___ the clipping region.

- A) 0001, Outside
- B) 0000, Outside**
- C) 0010, Inside
- D) 0100, Inside

68. Step 1: Identify the visible and invisible lines

Step 2: Identify the intersection points are calculated for the remaining lines. Which of the option increases the efficiency of the clipping algorithm?

- A) Only Step2
- B) Step1 and Step2**
- C) Only Step1
- D) None of the above

69. Consider the following statements:

1. The process of identifying the visible part of the picture for display is not straight forward.
2. Clipping algorithm is used to determine the points, lines or portions of lines that lie inside the clipping window.

State True or False.

- A) Both Statements True**
- B) 1-True, 2-False
- C) 1-False, 2-True
- D) Both Statements False

70. 1. It is a dot matrix

2. Characters are represented by an array of dots.

3. It is a two-dimensional array having columns and rows. Name the method: ___.

- A) Bitmap Method**
- B) Jpeg Method
- C) Cyan Method
- D) Binarization

71. 1. The x shear and y shear transformations can be applied relative to other ___ lines.

2. Negative values rotate objects in the ___ sense.

- A) Reference, Clockwise**
- B) Anticlockwise, Clockwise
- C) Anticlockwise, Reference
- D) Scaling, Reference

72. The viewing transformation is the combination of ___ transformation and ___ transformations.

A) Normalization, Workstation

B) Phase normalization, Frequency normalization

C) Frequency normalization, Workstation

D) Phase normalization, Workstation

73. 1. A ___ is the one onto which the perspective projection of a set of parallel lines which are not parallel to the projection plane converge.

2. ___ is the one at which the vanishing point for any set of lines that are parallel to one of the three principal axes of an object.

A) Axis vanishing point, Principle vanishing point

B) Axis vanishing point, Vanishing point

C) Vanishing point, Axis vanishing point

D) View reference point, Vanishing point

74. ___ is used to convert the 3D description of objects in viewing coordinates to the ___.

A) Modeling transformation, 2D world coordinates

B) Projection transformation, 2D projection coordinates

C) Viewing transformation, 2D view coordinates

D) Workstation transformation, 2D device coordinates

75. 1. View-distance tells how far the camera is positioned from the ___.

2. A ___ projection preserves relative proportions of objects but does not produce realistic views.

A) View plane, Workstation transformation

B) View plane, Viewing transformation

C) View reference point, parallel

D) View volume, Projection transformation

Computer Graphics Multiple choice questions (MCQ's)

1) GUI stands for -

Graphics uniform interaction

Graphical user interaction

Graphical user interface

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 -

Simulation

Drawing

Movies, photographs

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 -

Computer art design

Computer-aided design

Car art design

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 -

- A monitor
- Display controller
- Frame buffer
- 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 -

- Interactive computer graphics
- Non-Interactive computer graphics
- Both (a) & (b)
- 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?

- a string containing only 0's
- a string containing only 1's
- a string containing two 0's
- 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 -

Better

Worst

Smaller

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?

Video monitor

Scanner

Speaker

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?

Display

Window

Viewport

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 -

The ratio of the vertical points to horizontal points
of pixels

Both (a) & (b)

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?

Dotted line

Dashed line

Dark line

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 -

Direct differential analyzer

Data differential analyzer

Direct difference analyzer

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?

Midpoint algorithm

DDA algorithm

Bresenham's Line algorithm

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 -

Translation

Reflection

Shearing

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')?

$$x' = x + t_y \text{ and } y' = y + t_x$$

$$x' = x - t_x \text{ and } y' = y - t_y$$

$$x' = x + t_x \text{ and } y' = y + t_y$$

$$x' = x + t_x \text{ and } y' = y - t_y$$

Hide Answer Workspace

Answer: (c) $x' = x + t_x$ and $y' = y + t_y$

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

$$x' = x + t_x$$

$$y' = y + t_y.$$

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

Translation

Rotation

Scaling

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?

Rotational distance

Rotation angle

Co-ordinates

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 -
- rotates an object in the clockwise direction
 - rotates an object in the counter-clockwise direction
 - Both of the above
 - 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?

- Translation
- Scaling
- Rotation
- 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 s_x and s_y less than 1 (i.e., $s_x < 1$ and $s_y < 1$)?

- No change in the object's size
- Reduce the object's size

Increase the object's size

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?

Values of scaling factors s_x and s_y are unequal.

Values of scaling factors s_x and s_y are equal.

Both of the above

None of the above

Hide Answer Workspace

Answer: (b) Values of scaling factors s_x and s_y are equal.

Explanation: If the values of scaling factors s_x and s_y are equal, it is called Uniform Scaling.

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

4

8

9

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?

0000

0010

0110

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?

Half outside half inside

Completely inside

Completely outside

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?

Mouse

Printer

Scanner

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?

Trackball

Mouse

Spaceball

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?

Impact printers

Trackball

Mouse

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?

Laser printer

Inkjet printer

Line printer

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?

Mouse

Trackball

Touch panel

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?

Digitizer

Touch panel

Image scanner

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 -

Random scan display

Monitors with color capability

Monitors with no color capability

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 -

zooming

copying

removing objects and lines

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 -

Color drawing application

Pixel drawing application

Line drawing application

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

7

2

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 -

Raster scan system

Random scan system

Both (a) & (b)

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?

Shadow mask method

Beam penetration

Both of the above

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?

Raster scan system

Random scan system

Both (a) & (b)

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 -

Emissive display

Non-Emissive display

Printer

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?

Boundary fill algorithm

Scan line polygon fill algorithm

Flood fill algorithm

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?

Boundary fill algorithm

Scan line polygon fill algorithm

Flood fill algorithm

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 -

Curved strip

A smooth curve is drawn using a pencil.

A flexible strip used to generate a smooth curve through a designated set of points.

None of the above

Hide Answer Workspace

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?

RGB and CMK

RGB and CMG

RGB and CMYK

All of the above

Hide Answer Workspace

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 -

Painting

Sketching

Printing

Computer display

Hide Answer Workspace

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?

Green

Dark red

Dark blue

White

Hide Answer Workspace

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 -

Green

White color

Black color

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 -

Red, Green, Blue

Cyan, Magenta, Blue

Red, Green, Orange, Yellow

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 -

Translation

Transformation

Rasterization

Scaling

Hide Answer Workspace

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 -

Resolution

Projection

Rasterization

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 -

CRT

Flat-panel display

Portable display

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 -

Non-emissive display

Liquid crystal display

Gas discharge display

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.

1. Erasing of the screen either selective or a part is not possible in ...

a) DVST

b) SCR

c) OCR

d) none of these

A

2. [Computer graphics](#) are classified as

a) raster and pixels

b) vector and raster

c) vector and paths

d) none of these

B

3. DTP is abbreviated as ...

- a) desktop publishing
- b) desk town publishing
- c) draw top publishing
- d) none of these

A

4. Complex graphics include which of the following operation?

- a) selection
- b) clipping
- c) sorting
- d) all of these

B

5. What happens if the pixels of an image are increased?

- a) blur
- b) hide
- c) better
- d) smaller

C

6. Graphic software is a tool used to create

- a) designs
- b) images & animated pictures
- c) text
- d) all of these

B

7. Which ink is used in laser printer?

- a) wet

- b) solid
- c) dry
- d) none of these above

C

8. LCD projectors are of how many types?

- a) 1
- b) 2
- c) 3
- d) 4

A

9. Bit map and vector graphics are used for ...

- a) DRO image file format
- b) ECR iamge file format
- c) EPS image file format
- d) none of these

C

10. P ixel is defined as

- a) medium sized screen element
- b) largest addressable screen element
- c) smallest addressable screen element
- d) all of the above

C

11. The fifth major key element in design of multimedia application is ...

- a) graphics
- b) styling

- c) designing
- d) all of these

A

12. The most simplest output primitive is ...

- a) circle
- b) point
- c) line
- d) all of these

B

The division displayed on the screen into row and columns is called

- (A) Rubber band method
- (B) Grid
- (C) Dragging
- (D) Gravity field

Answer: (B) Grid

Define ZUI in computer Graphics.

- (A) An application that saves memory
- (B) Logical Enhancement of GUI
- (C) A Widget
- (D) None of above

Answer: (C) A Widget

Select the reason of circle drawn on the screen show to be elliptical?

- (A) Our eyes are not at the same level on screen
- (B) Screen has rectangular shape
- (C) It is due to the aspect ratio of monitor
- (D) CRT is completely spherical

Answer: (C) It is due to the aspect ratio of monitor

In Bresenham's algorithm error is represented by ?

- (A) $-1/2$
- (B) 1
- (C) 0
- (D) None of above

Answer: (C) 0

Select from the following which technique is used in Midpoint Subdivision algorithm?

- (A) Linear search
- (B) Heap sort
- (C) Binary search
- (D) Bubble sort

Answer:(B) Heap sort

The Hue of color is belong to?

- (A) Luminance
- (B) Wavelength
- (C) Incandescence
- (D) Saturation

Answer: (B) Wavelength

The term of having a uninterupted glow of a beam on the screen even after it is finished is known as?

- (A) Phosphorescence
- (B) Persistence
- (C) Fluorescence
- (D) Incandescence

Answer: (A) Phosphorescence

Select the use of Presentation graphics?

- (A) produce high-quality graphs, charts, and diagrams in order to present facts, trends and comparisons
- (B) create animation
- (C) create computer-aided designs
- (D) all of these

Answer: (A) produce high-quality graphs, charts, and diagrams in order to present facts, trends and comparisons

The Fast zooms are managed by

- (A) Performing a zoom all
- (B) Turning QTEXT off
- (C) Using viewers command
- (D) Turning REGEN command off

Ans: (C) Using viewers command

Select the command used to joined two regions along into one is

(A) UMON

(B) JOIN

(C) PEDIT

(D) MERGE

Answer : (B) JOIN

Select the 'macro and symbols editor' function in the CAD system?

(A) provides an efficient means of locating and deleting lines

(B) enable means and symbols to be located and deleted

(C) allows points to be moved independently, providing the ability to stretch line

(D) all of these

Answer: (B) enable means and symbols to be located and deleted

Select the devices tat are not a graphic input and output device?

(A) Line printer

(B) Light pen

(C) Digitizer

(D) Tablet

Answer: (B) Light pen

Which one is used to get length of an arc.

(A) DIST command

(B) DDMODIFY command

(C) ID command

(D) LIST command on the arc

Ans: (B) DDMODIFY command

Select the command that used to edit a spline object.

(A) PEDITSPLINE

(B) SPLINDIT

(C) DDMODIFY

(D) DDCHROP

Ans: (B) SPLINDIT

Select the technique in which man and machine are blended into a problem solving team, intimately coupling the best characteristics of each?

(A) CRT

(B) CAD

(C) CAM

(D) None of these

Ans:(B) CAD

Select the feom the following which normally used where a high degree no interaction is compolsoury?

(A) Remote terminal processing

(B) Intelligent terminal processing

(C) Online processing

(D) Batch mode processing

Answer: (C) Online processing

Select the input devices that Interactive computer graphics

(A) Graphic tablet

(B) Joystick

(C) Mouse

(D) All of these

Answer: (D) All of these

The Input function are for what purpose?

(A) Process the data flow from these interactive devices

(B) Control the data flow from these interactive devices

(C) Both A & B

(D) None of these

Answer: (C) Both A & B

Select the way between computer and user that used by the interactive computer graphics.

(A) Two

(B) One

- (C) Three
- (D) Four

Answer (A) Two

How User can make any modification on image by the use of

- (A) Interactive graphics
- (B) Non-interactive graphics
- (C) Both a & b
- (D) None of these

Answer: (A) Interactive graphics

CAD stands for?

- (A) Car aided design
- (B) Computer aided design
- (C) Computer art design
- (D) None of these

Answer (B) Computer aided design

Select from the following which are the components of Interactive computer graphics

- (A) A digital memory or frame buffer
- (B) An interface or display controller
- (C) A television monitor
- (D) All of these

Answer: (D) All of these

Select the type of connects that display controller serves to pass

- (A) Monitor to frame buffer
- (B) Frame buffer to monitor
- (C) Both a & b
- (D) None of these

Answer: (B) Frame buffer to monitor