UNIT II

Windowing and Clipping

4

Multiple Choice Questions for Online Exam

Q. 1 Cohen Sutherland clipping algorithm computes _____ number of intersections than NLN line clipping.
(a) more (b) less
(c) same (d) can't be predicted
Ans. : (a)

Q. 2 Liang-Barsky clipping algorithm computes _____ number of intersections than NLN line clipping.
(a) more (b) less
(c) same (d) can't be predicted
Ans. : (a)

Q. 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 **Ans. : (d)**

Q. 4 A polygon can be clipped by using the Nicholl-Lee-Nicholl algorithm.
(a) True (b) False **Ans. : (b)**

Q. 5 What is the primary use of clipping in computer graphics?
(a) adding graphics
(b) removing objects and lines
(c) zooming
(d) copying **Ans. : (b)**

Q. 6 How many methods of text clipping are there?
(a) 5 (b) 4
(c) 3 (d) 2 **Ans. : (c)**

Q. 7 A bitmap is collection of _____ that describes an image.
(a) bits (b) colors
(c) algorithms (d) pixels **Ans. : (d)**

Q. 8 The process of selecting and viewing the picture with different views is called_____.
(a) Clipping
(b) Windowing
(c) Segmenting
(d) all of above **Ans. : (b)**

Q. 9 Process which divides each segment of the picture into its visible and invisible portion, allowing the invisible portion to be discarded is called_____.
(a) Clipping
(b) Windowing
(c) Segmenting
(d) all of above **Ans. : (a)**

Q. 10 Finite world co-ordinate area selected to perform Viewing transformation for display is called a _____.
(a) Window (b) Segment
(c) Clip (d) Viewport **Ans. : (a)**

Q. 11 An area on a physical device to which a window is mapped is called a _____.
(a) Window (b) Segment
(c) Clip (d) Viewport **Ans. : (d)**

Q. 12 The region of a picture against which an object is to be clipped is called a
(a) Clip Window (b) Segment
(c) Clip (d) Viewport **Ans. : (a)**

Q. 13 The line is said to be interior to the clipping window if _____point(s) is/ are interior to the window.
(a) any line (b) one end
(c) both end (d) any two **Ans. : (c)**

Q. 14 Cohen-sutherland subdivision line clipping algorithm uses _____ regions with diffrerent codes.
(a) 8 (b) 6
(c) 4 (d) 9 **Ans. : (d)**

Q. 15 The transformation which maps the viewing co-ordinates to normalized device co-ordinte is called _____.
(a) Viewing transformation
(b) translation
(c) normalization transformation
(d) homogeneous transformation **Ans. : (c)**

Q. 1 _____ is a method of selecting and enlarging the portions of a drawing.
(a) Shearing (b) Clipping
(c) Windowing (d) Viewing
Ans. : (c)

Explanation : The method of selecting and enlarging the portions of a drawing is called windowing.

Q. 2 In Cohen Sutherland algorithm, when the logical AND of two Outcode's of a line is nonzero then _____ .
(a) The line is completely visible
(b) The line may be partially visible or may not be visible
(c) The line is completely invisible
(d) None of These
Ans. : (c)

Explanation : In Cohen Sutherland algorithm, the line is completely invisible, if the logical AND of two Outcode's of a line is nonzero.

Q. 3 The rectangular portion of the window where the image will get displayed is called _____.
(a) Transformation viewing (b) Clipping window
(c) Screen coordinates (d) Viewport
Ans. : (d)

Explanation : The rectangle portion of the interface window that defines where the image will actually appear on the screen is called Viewport.

Q. 4 The process of removing a portion of a picture which lay outside a specified region is called _____.

(a) Clipping (b) Shearing
(c) Viewing (d) Deleting

Ans. : (a)

Explanation : The process of extracting a portion of a database or a picture inside or outside a specified region is called clipping.

Q. 5 In Cohen-Sutherland algorithm, if a 4 bit Outcode of a end point is 1010, then it means _____ .

(a) The end point of a line is above and left side of the window
(b) The end point of a line is above and Right side of the window
(c) The end point of a line is below and left side of the window
(d) The end point of a line is below and Right side of the window

Ans. : (b)

Explanation : The 4-bit Outcode stands for ABRL. i.e. Above, Below, Right, Left. For Outcode 1010, the end point of a line is above and Right side of the window.

Q. 6 When both the end points Outcode of a line are 0000 then _____.

(a) The line is completely invisible
(b) The line is completely on one side of the window
(c) The line may be partially visible or may not be visible
(d) The line is completely visible

Ans. : (d)

Explanation : When both the end points Outcode of a line are 0000 then, the line is completely visible.

Q. 7 Viewport is _____.

(a) Selecting the part of the scene for display
(b) Where to display the selected contents of the window on the screen
(c) Determining what not to display
(d) None of These

Ans. : (b)

Explanation : Viewport is defined as the portion of display where the selected contents of the window is displayed on the screen.

Q. 8 If both the Outcodes of a line's endpoint are not same and nonzero then _____.

(a) The line may be partially visible or may not be visible
(b) The line is completely invisible
(c) The line is completely visible
(d) None of These

Ans. : (a)

Explanation : When both the end points Outcode of a line are not same and nonzero then the line may be partially visible or may not be visible. In this scenario we have to check each bit of the Outcode.

Q. 9 The process of mapping of a part of world co-ordinate scene to device co-ordinates is referred as _____.

(a) Viewing Transformation
(b) Affine Transformation
(c) Translation (d) None of these

Ans. : (a)

Explanation : In general the mapping of a part of world co-ordinate scene to device co-ordinates is referred as viewing transformation.

Q. 10 Sutherland Hodgeman Algorithm is used for _____.

(a) Polygon filling (b) Line clipping
(c) Polygon clipping (d) Text clipping

Ans. : (c)

Explanation : Sutherland Hodgeman Algorithm is used for Polygon clipping. For line clipping Cohen Sutherland algorithm is used.

Q. 11 The polygon is made up of lines but still line clipping algorithm is not used to clip the polygon, because _____.

(a) line clipping algorithm clips the limited number of lines only
(b) The clipped polygon may have more or less number of edges
(c) line clipping algorithm is simple but polygon is a complex and closed figure.
(d) None of These

Ans. : (b)

Explanation : The polygon is made up of lines but still line clipping algorithm is not used to clip the polygon, because the clipped polygon may have more or less number of edges. The line clipping algorithm does not add or reduces the number of edges.

Q. 12 In Sutherland Hodgeman Polygon clipping algorithm, if the current vertex is inside the window and next vertex is outside the window then we need to store _____.

(a) Intersection point and outside vertex
(b) Only intersection point
(c) Only inside vertex
(d) Only outside vertex

Ans. : (b)

Explanation : In Sutherland Hodgeman Polygon clipping algorithm, if the current vertex is inside the window and next vertex is outside the window then we need to store only intersection point because we need this point to be displayed.

Q. 13 In Cohen Sutherland Line clipping algorithm, after finding the intersection point of a line with a right boundary of window, the Outcode of this intersection point will be _____.

(a) (0,0,0,0) (b) (0,0,0,1)
(c) (0,0,1,0) (d) (1,0,0,0)

Ans. : (a)

(c) Text clipping (d) Circle clipping

Ans. : (b)

Explanation : In Exterior clipping, the contents which are inside the window are getting clipped and the contents which are outside the window are displayed.

Q. 25 Windowing means _____.

(a) Selecting the part of the scene for display
(b) Removing the portion of scene
(c) Providing the location of the scene on screen
(d) None of these

Ans. : (a)

Explanation : Windowing means Selecting the part of the scene for display.

Q. 26 In Cohen-Sutherland algorithm, if a 4 bit Outcode of a end point is 0110, then it means _____.

(a) The end point of a line is above and left side of the window
(b) The end point of a line is above and Right side of the window
(c) The end point of a line is Below and left side of the window
(d) The end point of a line is Below and Right side of the window

Ans. : (d)

Explanation : The 4-bit Outcode stands for ABRL. i.e. Above, Below, Right, Left. For Outcode 0110, the end point of a line is Below and Right side of the window.

Q. 27 In Cohen-Sutherland algorithm, which of the following is invalid Outcode _____.

(a) (0,1,0,1) (b) (1,0,1,0)
(c) (0,1,1,0) (d) (0,0,1,1)

Ans. : (d)

Explanation : If the Outcode is (0,0,1,1) then it means the point is on right and left of the window. But a point can be either right or at left. It cannot be on both the sides.

Q. 28 In Cohen-Sutherland algorithm, which of the following is valid Outcode _____.

(a) (0,0,1,1) (b) (0,1,1,0)
(c) (1,1,0,0) (d) None of These

Ans. : (b)

Explanation : The 4-bit Outcode stands for ABRL. i.e. Above, Below, Right, Left. For Outcode 0110, the end point of a line is Below and Right side of the window.

Q. 29 In which of the following clipping algorithm, intersection point w.r.t. window is not needed.

(a) Cohen-Sutherland algorithm
(b) Mid point subdivision algorithm
(c) Sutherland hodgeman algorithm
(d) Weiler Atherton algorithm

Ans. : (b)

Explanation : In Mid point subdivision clipping algorithm we are not calculating intersection point with edge of window but instead we are calculating the Mid point of the line segment.

Q. 30 In Cohen Sutherland Line clipping algorithm, after finding the intersection point of a line with a left boundary of window, the Outcode of this intersection point will be _____.

(a) (0,0,0,0) (b) (0,0,0,1)
(c) (0,0,1,0) (d) (1,0,0,0)

Ans. : (a)

Explanation : In Cohen Sutherland Line clipping algorithm, after finding the intersection point of a line with a left boundary of window, the Outcode of this intersection point will be (0,0,0,0), because the boundary point is not laying outside of any side of the window.

Q. 31 Which of the following is not true w.r.t. polygon clipping ?

(a) Line clipping algorithms are not used for polygon clipping
(b) The shape of polygon may change after clipping
(c) The sequence of clipping w.r.t. window edges is fixed
(d) The number of vertices may be increased after clipping

Ans. : (c)

Explanation : The sequence of clipping w.r.t. window edges is not fixed in polygon clipping algorithm.

Q. 32 In Sutherland Hodgeman Polygon clipping algorithm, if the current vertex is inside the window and next vertex is outside the window then we need to store _____.

(a) Intersection point and inside vertex
(b) Only intersection point
(c) Only inside vertex
(d) None of these

Ans. : (b)

Explanation : In Sutherland Hodgeman Polygon clipping algorithm, if the current vertex is inside the window and next vertex is outside the window then we need to store only intersection point.

Q. 33 Which of the following is not true w.r.t. Sutherland Hodgeman algorithm ?

(a) Sometimes Extra edge is getting inserted
(b) Not applicable for any concave polygon
(c) Applicable for all types of convex polygons
(d) The shape of polygons are getting changed

Ans. : (b)

Explanation : Sutherland Hodgeman Algorithm is used for concave type of polygons also but in some cases it is not working properly.

Q. 34 In Weiler-Atherton clipping algorithm, if current vertex is outside the window and the next vertex along the polygon boundary is inside the window then we have to store _____.

(a) Intersection point only