

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

2. We translate a two-dimensional point by adding

- a) Translation distances
- b) Translation difference
- c) X and Y
- d) None of the mentioned

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

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  $y' = y - dy$

5. \_\_\_\_\_ is a rigid body transformation that moves objects without deformation.

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

6. 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) None of the mentioned

7. 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

8. The basic geometric transformations are

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

9. 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) Both a and b
- d) Any of the mentioned

10. To generate a rotation , we must specify

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

11. Positive values for the rotation angle  $\Theta$  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

12. 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

13. 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

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

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

15. 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

16. 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

17. 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

18. 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

19. 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

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

- a) True
- b) False

21. 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)  $m/n$

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

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

23. 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)  $(x, y) \rightarrow (x+ay, y+bx)$

24. Shearing is also termed as \_\_\_\_\_

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

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

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

26. 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

27. 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

28. A view is selected by specifying a sub-area of the \_\_\_\_\_ picture area.

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

d) quarter

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

- a) True
- b) False

30. 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

31. 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

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

- a) 3
- b) 2
- c) 1
- d) 5

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

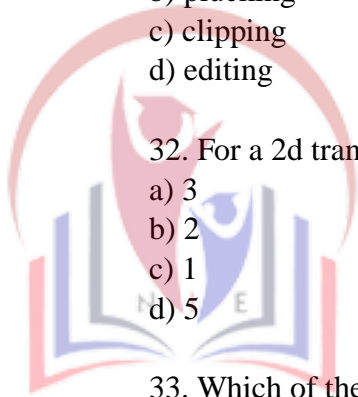
- a) line clipping
- b) point clipping
- c) area clipping
- d) solid clipping

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

- a)  $x_{w_{min}} < x < x_{w_{max}}$
- b)  $x_{w_{min}} = x = x_{w_{max}}$
- c)  $x_{w_{min}} > x > x_{w_{max}}$
- d)  $y_{w_{min}} = y = y_{w_{max}}$

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

- a) True
- b) False



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36. 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

37. 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

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

- a) True
- b) False

39. 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

40. A polygon can be clipped using clipping operations.

- a) True
- b) False

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

- a) top right
- b) bottom right
- c) bottom left
- d) top left

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

- a) True
- b) False

43. 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

44. Cohen-Sutherland clipping is an example of \_\_\_\_\_

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

45. The Cohen-Sutherland algorithm divides the region into \_\_\_\_\_ number of spaces.

- a) 8
- b) 6
- c) 7
- d) 9

46. The centre region of the screen and the window can be represented as \_\_\_\_\_

- a) 0000
- b) 1111
- c) 0110
- d) 1001

47. The Cohen-Sutherland algorithm can be only be used on a rectangular clip window.

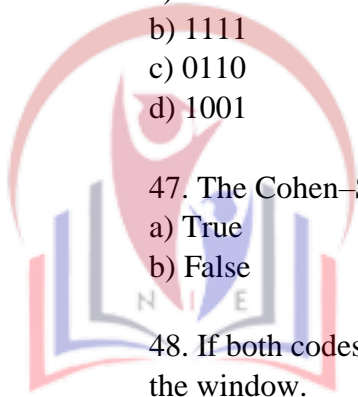
- a) True
- b) False

48. 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

49. The 4-bit code of top-left region of the window is \_\_\_\_\_

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



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