

Graphics rendering has three functional stages, which are in sequence _____

- a. Geometry stage, rasterization stage, application stage
- b. Rasterization stage, geometry stage, application stage
- c. Application stage, geometry stage, rasterization stage
- d. Application stage, rasterization stage, geometry stage

d

Which one is related to haptic rendering?

- a. Force
- b. Smell
- c. Look
- d. Hear

a

Which of the followings is defined by two endpoints and two tangent vectors?

- a. Bezier curve
- b. Hermite curve
- c. Line
- d. Circle

b

What type of connectivity do the following two curves have at their joining point?

- C0
- C1
- G0
- G1

b



Why are cubic Hermite curves difficult to model compared to cubic Bezier curves?

- a. A Hermite curve needs four control points, whereas a Bezier curve does not need any control point
- b. A Hermite curve needs two tangents, whereas a Bezier curve needs one tangent
- c. A Hermite curve needs two tangents, whereas a Bezier curve does not need any tangent
- d. The question is wrong, because cubic Hermite curves are easier to model than cubic Bezier curves

c

The point (3, 2) when reflected about the X-axis becomes

- a. (3, -2)
- b. (2, 3)
- c. (2, -3)
- d. (-3, 2)

$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix} * \begin{bmatrix} 3 \\ 2 \\ 1 \end{bmatrix} = \begin{bmatrix} 3 \\ -2 \\ 1 \end{bmatrix}$$

A line segment between P1(0, 0) and P2(2, 2) is scaled by factors Sx = 0.5 and Sy = 2. The new points will be:

- a. P1(0,0) and P2(4,4)
- b. P1(0,0) and P2(4,0)
- c. P1(0,0) and P2(1,4)
- d. P1(0,0) and P2(4,1)

$$\begin{bmatrix} 0.5 & 0 \\ 0 & 2 \end{bmatrix} * \begin{bmatrix} 0 \\ 0 \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$$

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$$\begin{bmatrix} 0.5 & 0 \\ 0 & 2 \end{bmatrix} * \begin{bmatrix} 2 \\ 2 \end{bmatrix} = \begin{bmatrix} 1 \\ 4 \end{bmatrix}$$

8. A line can be defined by

- a. two points
- b. one point
- c. four points
- d. three points

a



9. Which of the following statements is not true with respect to the Digital Differential Analyzer (DDA) algorithm for line drawing?

- a. It is an incremental method of scan conversion of line
- b. In this method, calculation is performed at each step but by using the results of previous steps
- c. This algorithm can also be used to draw circle
- d. It is a decrement method of scan conversion of line

d

10. Which of the following best defines Scan Conversion in computer graphics?

- a. It is a process of representing graphics objects as a collection of pixels
- b. It is a process of converting colored images to grayscale images
- c. It is a process of converting handmade drawing to computer pictures through a scanner
- d. It is a process of representing graphics objects as a collection of voxels

a

11. Each pixel has some intensity value which is represented in memory of the computer. This memory part is known as the _____.

- a. Frame Buffer
- b. Random Access Memory (RAM)
- c. Picture Memory
- d. Read Only Memory (ROM)

a

12. Which of the following line drawing algorithms is the most effective and efficient?

- a. Midpoint algorithm
- b. Bresenham's Line algorithm
- c. DDA algorithm

b

13. The intersection of three primary RGB color produces

- a. White color
- b. Black color
- c. Magenta color
- d. Blue color

a

14. The intersection of three primary CMY color produces

- a. White color
- b. Black color
- c. Magenta color
- d. Blue color

b

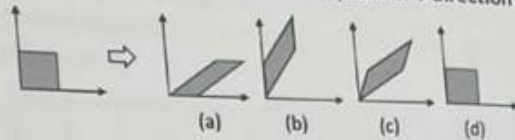
15. In CMY, the _____ absorbs red, _____ absorbs green, and _____ absorbs blue.

- a. Magenta, cyan, yellow
- b. Magenta, yellow, cyan
- c. Cyan, yellow, magenta
- d. Cyan, magenta, yellow

d

16. Which one will be resulting output if a shearing is done on a square in Y direction?

- a. a
- b. b
- c. c
- d. d



d

17. Steps for window to viewport transformation are:

- a. translation, scaling, translation
- b. scaling, translation, rotation
- c. scaling, rotation, scaling
- d. scaling, translation, scaling

a

18. Which one is a drawback of forward texture mapping?

- a. Red color becomes blue color after the mapping
- b. It can map 2D texture to 2D objects only
- c. Non-colored area (empty pixels) may be created
- d. It works only for spheres

c

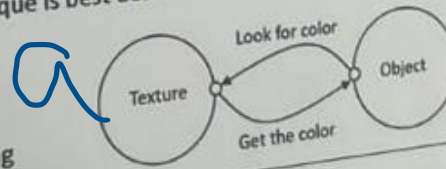
19. Which texture method deals with perturbing (altering) the surface normals of the object?

- a. Environment mapping
- b. Mip mapping
- c. Bump mapping
- d. Procedural mapping

a

20. Which texture mapping technique is best described by the following picture?

- a. Forward texture
- b. Backward texture
- c. Mip mapping
- d. Environmental mapping



a

Part 2: 4 Essay questions

Q1. Write the names and binary values of the colors in RGB and CYM models in the eight corners of the following color cube.

