1. Which transformation involves moving an object along a specific direction in space?
a) Translation
b) Rotation
c) Scaling
d) Perspective Projection

Answer: a) Translation
Explanation: Translation involves shifting an object’s position along a specified direction in space without changing its orientation or size.

2. Which transformation involves rotating an object about a fixed point in space?
a) Translation
b) Rotation
c) Scaling
d) Parallel Projection

Answer: b) Rotation
Explanation: Rotation changes the orientation of an object by rotating it around a fixed point in space.

3. Which transformation involves resizing an object by increasing or decreasing its dimensions?
a) Translation
b) Rotation
c) Scaling
d) Perspective Projection

Answer: c) Scaling
Explanation: Scaling changes the size of an object by either enlarging or reducing its dimensions along the x, y, and z axes.

4. Which projection technique preserves parallelism but not necessarily the relative sizes of objects?
a) Parallel Projection
b) Perspective Projection
c) Orthographic Projection
d) Isometric Projection

Answer: a) Parallel Projection
Explanation: Parallel projection maintains parallelism between lines in the object and the projection plane but doesn't necessarily preserve relative sizes or depth perception.

5. Which projection technique simulates the way the human eye perceives objects, creating a sense of depth?
a) Parallel Projection
b) Perspective Projection
c) Orthographic Projection
d) Isometric Projection

Answer: b) Perspective Projection
Explanation: Perspective projection mimics the way objects appear smaller as they move farther away, creating a sense of depth and realism similar to human vision.

6. Which algorithm is used for detecting and eliminating hidden surfaces in computer

graphics?
a) Depth comparison
b) Back face detection algorithm
c) Painter’s Algorithm
d) Z-Buffer Algorithm

Answer: d) Z-Buffer Algorithm
Explanation: The Z-Buffer Algorithm is a widely used method for hidden surface removal, where each pixel in the scene is associated with a depth value, and surfaces closer to the viewer are displayed while hidden surfaces are discarded.

7. Which algorithm compares the depths of surfaces to determine which is closer to the viewer?
a) Depth comparison
b) Back face detection algorithm
c) Painter’s Algorithm
d) Z-Buffer Algorithm

Answer: a) Depth comparison
Explanation: Depth comparison involves comparing the depths of surfaces in a scene to determine which ones are closer to the viewer and should be displayed.

8. Which algorithm identifies and eliminates surfaces that are facing away from the viewer?
a) Depth comparison
b) Back face detection algorithm
c) Painter’s Algorithm
d) Z-Buffer Algorithm

Answer: b) Back face detection algorithm
Explanation: The back face detection algorithm identifies surfaces that are facing away from the viewer, allowing for their elimination from the rendering process.

9. Which algorithm sorts objects in a scene based on their distance from the viewer for rendering?
a) Depth comparison
b) Back face detection algorithm
c) Painter's Algorithm
d) Z-Buffer Algorithm

Answer: c) Painter's Algorithm
Explanation: Painter's Algorithm sorts objects based on their distance from the viewer and renders them from farthest to nearest, often leading to issues with occlusion or incorrect rendering order.

10. Which curve generation method is commonly used for creating smooth, flowing curves in computer graphics?
a) Bezier method
b) B-spline method
c) Catmull-Rom method
d) Lagrange method

Answer: b) B-spline method
Explanation: B-spline curves are commonly used in computer graphics for creating smooth, continuous curves with control points that influence the shape of the curve.

11. Which illumination model simulates the diffuse reflection of light from a surface equally in all directions?
a) Diffuse reflection
b) Specular reflection
c) Phong Shading
d) Gouraud shading

Answer: a) Diffuse reflection
Explanation: Diffuse reflection models the way light scatters evenly in all directions when it strikes a rough or matte surface.

12. Which illumination model simulates the reflection of light off a surface at specific angles, creating highlights?
a) Diffuse reflection
b) Specular reflection
c) Phong Shading
d) Gouraud shading

Answer: b) Specular reflection
Explanation: Specular reflection models the reflection of light off a surface at specific angles, creating highlights or shiny spots.

13. Which shading technique calculates lighting at each vertex and interpolates across the primitive for rendering?
a) Diffuse reflection
b) Specular reflection
c) Phong Shading

d) Gouraud shading

Answer: d) Gouraud shading
Explanation: Gouraud shading calculates lighting at each vertex of a primitive and interpolates the resulting colors across the primitive for rendering.

14. Which shading technique calculates lighting for each pixel individually, resulting in smoother surfaces?
a) Diffuse reflection
b) Specular reflection
c) Phong Shading
d) Gouraud shading

Answer: c) Phong Shading
Explanation: Phong shading calculates lighting for each pixel individually, taking into account the surface normals at each point, resulting in smoother shading transitions and highlights.

15. Which algorithm simulates the path of light rays to generate realistic images in computer graphics?
a) Depth comparison
b) Back face detection algorithm
c) Ray Tracing
d) Z-Buffer Algorithm

Answer: c) Ray Tracing
Explanation: Ray tracing simulates the path of light rays as they interact with objects in a scene, allowing for the generation of realistic images with accurate lighting and reflections.

16. Which color model represents colors using combinations of red, green, and blue primary colors?
a) RGB
b) YIQ
c) CMY
d) HSV

Answer: a) RGB
Explanation: The RGB color model represents colors using combinations of red, green, and blue primary colors, where varying intensities of each primary color produce different colors.

17. Which color model is commonly used in television broadcasting and video compression?
a) RGB
b) YIQ
c) CMY
d) HSV

Answer: b) YIQ
Explanation: The YIQ color model is commonly used in television broadcasting and video compression to encode color information, separating luminance (Y) from chrominance (I and Q) components.

18. Which color model is commonly used in subtractive color mixing, such as in printers?
a) RGB
b) YIQ
c) CMY
d) HSV

Answer: c) CMY
Explanation: The CMY color model is used in subtractive color mixing, where cyan, magenta, and yellow pigments are combined to produce a range of colors, with black (K) added for depth.

19. Which color model is based on the perception of hue, saturation, and value/brightness?
a) RGB
b) YIQ
c) CMY
d) HSV

Answer: d) HSV
Explanation: The HSV color model represents colors based on the perception of hue (H), saturation (S), and value/brightness (V), allowing for intuitive color selection and manipulation.

20. Which curve generation method allows for precise control over the shape of a curve through control points?
a) Bezier method
b) B-spline method
c) Catmull-Rom method
d) Lagrange method

Answer: a) Bezier method
Explanation: Bezier curves allow for precise control over the shape of a curve through control points, influencing the curve’s path and curvature.

21. Which algorithm is commonly used for hidden surface removal by comparing depths of surfaces?
a) Z-Buffer Algorithm
b) Back face detection algorithm
c) Depth comparison
d) Painter’s Algorithm

Answer: a) Z-Buffer Algorithm
Explanation: The Z-Buffer Algorithm compares depths of surfaces to determine visibility, allowing for hidden surface removal in computer graphics rendering.

22. Which shading technique calculates lighting at each pixel individually, offering smoother results?
a) Gouraud shading
b) Phong Shading
c) Diffuse reflection
d) Specular reflection

Answer: b) Phong Shading
Explanation: Phong Shading calculates lighting at each pixel individually, resulting in smoother shading transitions and highlights compared to techniques like Gouraud shading.

23. Which algorithm sorts objects based on their distance from the viewer for rendering?
a) Painter’s Algorithm
b) Z-Buffer Algorithm
c) Back face detection algorithm
d) Depth comparison

Answer: a) Painter’s Algorithm
Explanation: Painter’s Algorithm sorts objects based on their distance from the viewer and renders them from farthest to nearest, but it can lead to issues like occlusion or incorrect rendering order.

24. Which curve generation method provides smooth interpolation between control points?
a) Bezier method
b) B-spline method
c) Catmull-Rom method
d) Lagrange method

Answer: c) Catmull-Rom method
Explanation: Catmull-Rom curves provide smooth interpolation between control points, commonly used in computer graphics for creating smooth, flowing curves.

25. Which illumination model simulates light reflection from a rough surface equally in all directions?
a) Diffuse reflection
b) Specular reflection
c) Phong Shading
d) Gouraud shading

Answer: a) Diffuse reflection
Explanation: Diffuse reflection simulates light scattering evenly in all directions when it strikes a rough surface, providing a matte appearance.

26. Which projection technique preserves the relative sizes of objects but not necessarily

parallelism?
a) Perspective Projection
b) Orthographic Projection
c) Isometric Projection
d) Parallel Projection

Answer: b) Orthographic Projection
Explanation: Orthographic projection preserves the relative sizes of objects but doesn't necessarily maintain parallelism between lines in the object and the projection plane.

27. Which curve generation method is characterized by its ability to create curves of any degree?
a) Bezier method
b) B-spline method
c) Catmull-Rom method
d) Lagrange method

Answer: b) B-spline method
Explanation: B-spline curves can create curves of any degree, offering flexibility and versatility in computer graphics applications.

28. Which shading technique calculates lighting at vertices and interpolates across the primitive for rendering?
a) Gouraud shading
b) Phong Shading
c) Diffuse reflection
d) Specular reflection

Answer: a) Gouraud shading
Explanation: Gouraud shading calculates lighting at vertices of a primitive and interpolates the resulting colors across the primitive for rendering.

29. Which color model is commonly used in additive color mixing, such as in digital displays?
a) RGB
b) CMY
c) YIQ
d) HSV

Answer: a) RGB
Explanation: The RGB color model is used in additive color mixing, where red, green, and blue light are combined to produce a wide range of colors, as seen in digital displays.

30. Which curve generation method allows for precise control over the shape of a curve through control points?
a) Bezier method
b) B-spline method
c) Catmull-Rom method
d) Lagrange method

Answer: a) Bezier method
Explanation: Bezier curves allow for precise control over the shape of a curve through control points, influencing the curve's path and curvature.

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