1. How many axes does a three-dimensional graphics consists of?
a) One axis
b) Two axes
c) Three axes
d) Six axes

2. Which of the following is the most commonly used boundary representation for a 3-D graphics object?
a) Data polygon
b) Surface polygon
c) System polygon
d) Volume polygon

3. A three-dimensional object can be represented using which of the following representation?
a) Equation
b) Function
c) Point
d) Polygon

4. Which of the following equation correctly represent a 3 D plane?
a) Ax + By + Cz = 1
b) Ax + By + Cz = 0
c) Ax + By + Cz + D = 1
d) Ax + By + Cz + D = 0

5. Which of the following transformations are most common that are applied on three-dimensional objects?
a) Translation
b) Scaling
c) Rotation
d) Translation, Scaling, Rotation

6. How many types of projections are present in 3 D graphics?
a) 2
b) 3
c) 5
d) 7

7. Which of the following refers to the shapes created by union, intersection and difference of given shapes?
a) Wire frame model
b) Composite transformation
c) Constructive solid geometry methods

d) Destructive solid geometry methods

8. In which of the following, the projection plane is intersected by all three x, y and z axes at the same distances?
a) Cabinet projection
b) Perspective projection
c) Isometric projection
d) Cavalier projection

9. Which of the following operation can be applied on a 3 D object to move it along any axis from its original position?
a) Translation
b) Scaling
c) Rotation
d) Shearing

10. 2. If a point (x, y, z) is to be translated by an amount dx, dy and dz respectively, then what will be the value of the new translated points (x1, y1, z1)?
a) x1 = x, y1 = y and z1 = z
b) x1 = dx, y1 = dy and z1 = dz
c) x1 = x + dx, y1 = y + dy and z1 = z + dz
d) x1 = x – dx, y1 = y – dy and z1 = z – dz

11. In the equation x1 = dx + x; which part of the equation is called as the translation factor?
a) x1
b) dx
c) x
d) dx + x

12. If the original point P = (5, 7, 3) and the translation factor, T = (-2, -1, 3), then what will be the value of the final point P1?
a) P1 = (7, 8, 6)
b) P1 = (3, 6, 0)
c) P1 = (7, 8, 0)
d) P1 = (3, 6, 6)

13. How many different types of translation are present in computer graphics?
a) 1
b) 2
c) 3
d) 4

14. Which of the following operation can be applied on a 3 D object to zoom it in or out about any axis from its original position?
a) Translation
b) Scaling
c) Rotation
d) Shearing

15. What will be the value of new co-ordinates if the old co-ordinates are (X0 = 2, Y0 = 0, Z0 = 4) and the scaling factor is (Sx = 2, Sy = 1, Sz = 3)?
a) (X1 = 4, Y1 = 1, Z1 = 7)
b) (X1 = 0, Y1 = -1, Z1 = 1)
c) (X1 = 1, Y1 = 0, Z1 = 4/3)
d) (X1 = 4, Y1 = 0, Z1 = 12)

16. If Scaling factor is lesser than 1 then the object size is increased.
a) True
b) False

17. Which of the following operation can be applied on a 3 D object to rotate it about any axis from its original position?
a) Translation
b) Scaling
c) Rotation
d) Shearing

18. The positive value of the pivot point rotates an object in which of the following position?
a) Clockwise
b) Anti-Clockwise
c) Both Clockwise and Anti-Clockwise
d) Neither Clockwise nor Anti-Clockwise

19. Every vertex in a polygon is rotated with the same rotation angle.
a) True
b) False

20. Which of the following transformation is a rotation where angle of rotation is 180°?
a) Rotation
b) Shearing
c) Reflection
d) Translation

21. How many types of reflection is possible in a 3-dimensional environment?
a) 1
b) 3
c) 6
d) 9

22. Given a 3D shape with coordinates A(6, 4, -2), B(5, -3, 6), C(2, 1, -5) and D(-2, 4, 7), what will be the new coordinates if the shape undergoes 3D reflection relative to XZ plane?
a) A(-6, -4, -2), B(-5, -3, -6), C(-2, -1, -5), D(-2, -4, -7)
b) A(6, 4, 2), B(5, 3, 6), C(2, 1, 5), D(2, 4, 7)
c) A(6, 4, 2), B(-5, 3, -6), C(-2, -1, 5), D(2, 4, -7)
d) A(6, -4, -2), B(5, 3, 6), C(2, -1, -5), D(-2, -4, 7)

23. Which of the following transformation can be used to change the shape of a 3D object in any particular axis?
a) Scaling
b) Rotation
c) Shearing
d) Translation

24. What does composite transformations means?
a) Transformations that can be done in sequence
b) Transformations that cannot be done in sequence
c) Transformations that can be done simultaneously
d) Transformations that cannot be done simultaneously

25. A normal scaling operation also moves the object being scaled from its original points.
a) True
b) False

26. In terms of a line, which of the following means fixed point scaling?
a) Both endpoints of the line remains same even after scale
b) Both endpoints of the line changes after scaling
c) One endpoint of the line remains same after scaling
d) The line can be scaled only till a fixed point

27. Composite transformations increases the number of operations performed in a series of transformation.
a) True
b) False

28. What should be sequence of transformations that are required to perform rotation of an object around an arbitrary point?
a) Inverse Translation, Rotation, Translation
b) Scaling, Translation, Rotation
c) Translation, Rotation, Inverse Translation
d) Rotation, Translation, Scaling

29. Which of the following process is analogous to creating a view of a three dimensional scene?
a) Making a painting
b) Taking a photograph
c) Recording a sound
d) Editing a picture

30. How many steps are involved in converting the world coordinates of a scene to device coordinates?
a) 2
b) 3
c) 5
d) 7

31. Which of the following step involves converting viewing coordinates of a scene to the coordinate position on the projection plane?
a) Modelling Transformation
b) Viewing Transformation
c) Projection Transformation
d) Viewport Transformation

32. Which of the following is defined as mapping of a point P(x, y, z) onto its image P'(x', y', z') in the projection plane?
a) Mapping
b) Transformation
c) Clipping
d) Projection

33. The planar geometric projections can be divided into how many categories?
a) 2
b) 3
c) 4
d) 5

34. The Parallel Projection can be divided into how many categories?
a) 6
b) 8
c) 2
d) 5

35. Which types of lines are used to transform coordinate points to the view plane in parallel projection?
a) Intersecting Lines
b) Parallel Lines
c) Perpendicular Lines
d) Bisecting Lines

36. Which of the following orthographic parallel projection is called as a plan view?
a) Front
b) Side
c) Rear
d) Top

37. Which of the following parameters determines how much of the scene is caught in a film while photography?
a) Distance of camera from scene
b) Size of scene
c) Type of lens
d) Angle of camera

38. View volumes is setup using which of the following parameter?
a) Window boundaries
b) Window edges
c) World coordinates
d) Projection window

39. Which of the following parameter defines the size of the view volume of a scene?
a) Window boundaries
b) Size of the window
c) Type of Projection
d) Window edges

40. Which of the following parameter defines the shape of the view volume of a scene?
a) Window boundaries
b) Size of the window
c) Type of Projection

d) Window edges

41. How can an infinite view volume be changed into a finite view volume?
a) By changing the length of window boundaries
b) By changing the angle of projection
c) By changing the size of the window
d) By specifying positions for one or two additional boundary planes