

polygons.

19. List the basic approaches to area filling on raster scan systems and explain the scan line polygon fill algorithm.

20. Classify the visible surface detection algorithms and explain one of the image-space based algorithm.

21. Explain the property of light using electromagnetic spectrum. Also explain following terms

1. dominant frequency

2. purity

3. luminance

22. Explain following color model

1. XYZ color model.

2. RGB Color model.

3. YIQ color model.

4. CMY Color model.

23. What are the basic transformation techniques? Explain 2D rotation, translation and scaling with necessary equations.

24. What are the composite transformation techniques?

**25. Prove that the multiplication of 2D transformation matrices for each of the following sequence of operations is commutative

1. Two successive rotations.

2. Two successive translations.

26. What are step involved in the rotation about an arbitrary point (XC, YC).

**27. What is 2D shear transformation? Covert the unit square to shifted parallelogram using x direction shear transformation operation where parameter $sh_x = \frac{1}{2}$ and $Y_{ref} = -1$ and unit square dimensions are (0, 0), (1, 0), (0, 1) and (1, 1).

28. Explain reflection and shear with necessary equations.

29. Explain 2D Viewing transformation pipeline.

30. What is window and view-port? Retrieve equations for the scaling factors to map the window to view-port in 2D viewing system.

31. What is clipping explain?

**32. Explain Cohen- Sutherland line clipping algorithm with example.

34. How does Liang-Bar sky line clipping algorithm differ from Cohen - Sutherland algorithm? Explain it.

**35. Explain NLN (Nicholl-lee Nicoll) line clipping with suitable example.

36. What is polygon clipping? Discuss the algorithm which is used for polygon clipping.

37. Explain the display method for 3D?

38. How to represent the polygon surface for 3Dimensional graphics.

39. Explain Quadratic surface and Super Quadric Surface?

40. Explain viewing pipeline for 3D.

41. Explain the parallel and perspective projection techniques to project 3D object onto 2D viewplane.

**42. List the advantages of the B-splines over the Bezier splines and explain the B-spline curves properties

**43. Explain Perspective Projection in 3D display methods