CGV-IMP and SIMP Questions-22

Prepared by: By the **TIE** review team

Module-1-5 SIMP questions

1. Explain the different fields/Applications in Computer graphics that can be applied, Explain
2. Identify the differences between raster scan and random scan display, also explain in detail the architecture of raster scan display
3. Explain the primitives supported by OpenGL
4. Identify the different components of CRT Monitor
5. Solve the line by using Bresenham's algorithm using endpoints (20,10) and (30,18) with a slope given to be 0.8
6. What is DDA? Identify and represent all the points on the coordinate system using the DDA line algorithm for the endpoints given to be (1,1) and (8,9)
7. Solve the polygon A(2,4) B(2,8) C(4,9) D(4,6) to find the content of the active edge table
8. Apply the general scan line algorithm and determine the active edge table to fill the polygon of n=3
9. Solve using circle drawing algorithm with centre points as (10,10) and radius 8. Generate all the points to form a circle using the Midpoint algorithm
10. Solve to analyse that two successive 2D rotations are additive and successive scaling are multiplicative, show with an example
11. Apply translation, rotation, scaling, shearing and reflection transformation technique on a 2D triangle
12. Develop a composite homogeneous transformation matrix to rotate an object with respect to the pivot point, for the triangle A(3,5) B(6,2) and C(6,4) rotate in an anticlockwise direction by 90 degrees keeping A(3,5) fixed. Draw the new polygon
13. Inspect the reason for converting the transformation matrix to homogeneous coordinate representation and show the conversion process. Shear the polygon A(1,1) B(3,2) C(4,4) D(2,4) and E(1,3) along the x-axis with a shearing factor of 0.2
14. Analyse the Cohen Sutherland line clipping algorithm P1 (40,15) P2(75,45) against window A(50,40) B(60,10) C(80,10) D(80,40)
15. Find the final clipped vertices using the Sutherland Hodgman Polygon clipping Algorithm

16. Categorize and explain openGL statements for illumination and shading models with a diagram
17. Compare RGB and CMY color models. Explain the transformation between CMY and RGB color specs
18. Design the transformation matrix for orthogonal and perspective projections
19. Explain the depth buffer method and give the openGL visibility detection functions
20. Explain the difference between Perspective and parallel projections
21. Explain 3D viewing pipeline architecture and various viewing parameters(coordinate)
22. Define the transformation matrix for perspective projection and give openGL 3D viewing functions
23. Give the general classification of visible detection algorithm and explain any one algorithm in detail
24. Explain in detail symmetric perspective projection functions
25. Explain black face detection with an example
26. Write a short note on
(i)Curve and quadratic surfaces
(ii)openGL curve and surface functions
(iii)Bezier curve and surfaces with eq
(iv)Request, sample and input modes with block diagram
27. Write a short note on
(i)Logic operations
(ii)Input devices on clients and servers
(iii)Bezier spline curve and openGL curve functions
28. with the program snapshot, explain the creation of Menus in OpenGL
29. Logical classifications of input devices with examples

How we frame these questions:
TIE review team frames these questions by consolidating comprehensively from the following sources
1. Exercise problems of textbooks/ references
2. Previous year question VTU exam Question paper and MQP
3. Questions by Various HODs and professors in contact with TIE

Questions framed shall follow all Bloom's learning levels with appropriate action verbs ensuring coverage of all COs

COs Covered:
• Design and implement algorithms for 2D graphics primitives and attributes.
• Illustrate Geometric transformations on both 2D and 3D objects.
• Apply concepts of clipping and visible surface detection in 2D and 3D viewing, and Illumination
Models.
• Decide suitable hardware and software for developing graphics packages using OpenGL.

Bloom learning levels covered: Apply, Analyse, Understanding, Evaluating

Notes available for all modules:
https://takeiteasyengineers.com/category/cse-ise/6th-sem-cse-ise/cgv/