

K K Wagh Institute of Engineering Education & Research

Department of Computer Engineering

QUESTION BANK

Academic Year: 2013– 2014	Class: SE B	Div: B Semester: II
Subject: Computer Graphics and Gaming		Subject code: 210249
Name of the faculty: Megha Patil		

	UNIT 3	
1]	Compare different polygon filling algorithm [Oct 2012]	[4]
2]	Explain generalized clipping. [Oct 2012] [oct 2011]	[4]
3]	What is windowing and clipping ? What is interior and exterior clipping ? [Oct 2012] [April2013]	[6]
4]	Explain how a polygon is filled with pattern. [Oct 2012][April2013]	[4]
5]	Explain even-odd method to determine polygon interior points. [Oct 2012][April2013]	[4]
6]	Use Cohen-Sutherland outcode algorithm to clip two lines P1(40, 15) – P2(75, 45) and P3(75, 45) – P4(100, 10) against a window A(50, 10), B(80, 10), C(80, 40), D(50, 40). [Oct 2012]	[6]
7]	What is a polygon ? What are the different types of polygons ? [April 2012].[April 2010]	[4]
8]	What is scan line polygon filling algorithm ? Explain with an example [April 2012] [oct 2011]	[8]
9]	What is the need for clipping ? Explain Cohen-Sutherland outcode algorithm with the help of an example. [April 2012][April 2011].[April 2010]	[6]
10]	What is the necessary for 3D clipping and windowing algorithm ? Explain any one 3D clipping algorithm. . [oct 2011]	[6]
11]	Explain Sutherland-Hodgman algorithm for clipping. [oct 2011]. [April 2010]	[6]
12]	Explain with example, scan conversion algorithm for convex polygons.[April 2011]	[8]
13]	Explain with example functioning of seed fill and edge fill algorithms.[April 2011].[April 2010]	[8]
14]	Explain with example, generalized clipping algorithm.[April 2011]	[8]
15]	Explain Cohen-Sutherland outcode algorithm with example.[Oct 2010] [April2013]	[10]
16]	Explain two methods for testing whether the point is inside the polygon or not.	[6]

	[Oct 2010].[April 2010]	
17]	Can line clipping algorithm be used for polygon clipping ? Justify. [April 2010]	[8]

	Unit 4	
1]	What is the need of homogeneous coordinate system ? Give homogeneous representation of scaling, rotation and translation matrices. [Oct 2012] .[Oct 2010]	[4]
2]	Translate the square ABCD with coordinates A(0, 0), B(3, 0), C(3, 3), D(0, 3) by 2 units in both directions and then scale it by 2 units in X-direction and 0.5 units in Y-direction. [Oct 2012]	[6]
3]	Derive the transformation matrix for rotation about an arbitrary point. [Oct 2012][April 2011] [April2013]	[6]
4]	Find transformation matrix that transforms a square ABCD whose center is at (2, 2), is reduced to half of its size with center still remaining at (2, 2). The coordinates of square ABCD are A(0, 0), B(0, 4), C(4, 4), D(4, 0). Find the coordinates of transformed square. [Oct 2012]	[6]
5]	What is shear transformation ? Explain X-shear and Y-shear. [Oct 2012]	[4]
6]	Why is projection necessary ? Derive the transformation matrix for parallel projection. [Oct 2012][April 2011]	[4]
7]	What is homogeneous co-ordinate system? What is the need for this system in transformations? [April 2012]	[6]
8]	Explain in detail rotation of an object about an arbitrary axis in 3D. [April 2012]	[6]
9]	Describe the following transformations with respect to 2D : Scaling ,rotation, translation ,shear. [April 2012][April 2011]	[8]
10]	Write a short note on projections. [April 2012] [oct 2011][April 2011] .[Oct 2010] [April2013]	[6]
11]	What is viewing transformation ? [April 2012] [oct 2011] .[Oct 2010]	
12]	Describe 3D viewing transformations. [oct 2011] [April2013]	[6]
13]	Magnify the triangle with vertices A(0, 0), B(1, 1), C(5, 2) to twice its size as well as rotate it by 45°. Derive the translation matrices. [oct 2011] [April2013]	[6]
14]	With the help of axis system diagram explain advantages of 3D transformations.[April 2011]	[8]
15]	A 3D square box with vertex A at origin and vertex B(2,2,2) in 3D space, is shifted such that vertex A becomes A(1,1,1). Give necessary transformation treatment. [April 2011]	[10]
16]	Consider the square A(1, 0), B(0, 0), C(0, 1) and D(1, 1). Show the steps to	[10]

	rotate the given square by 45 degrees clockwise about point A(1, 0). [Oct 2010]	
17]	<p>A 3D cube of dimensions (length, breadth and height) units each is placed. in a 3D axis system' such that one of its vertex A is at the origin i.e., (0, 0, 0) and vertex F in 3D space' A cube is rotated by 45 degrees along the line segment AF in anticlockwise direction:</p> <p>I) Draw the initial state of the cube</p> <p>II) Perform necessary transformation(translation, scaling, rotation)</p> <p>III) Draw final state of cube.[April 2010]</p>	[18]

	Unit5	
1]	Write short notes on Blending functions [Oct 2012]	[6]
2]	Write short notes on Bezier curves [Oct 2012][April 2011] [oct2010][April2013]	[6]
3]	Write short notes on Fractal lines and surfaces. [Oct 2012][April 2011]][oct2010] April 2010]	[6]
4]	Write short notes on B-splines [Oct 2012][oct 11][April 2011][oct2010][April2013][April 2010]	[6]
5]	Write short notes on Interpolation [Oct 2012]	[6]
6]	Write short notes on Fractals. [Oct 2012][April 2012][April2013]	[6]
7]	Explain Back-Face removal algorithm. [Oct 2012] [April 2012][oct 2011][April2011][April2013]	[6]
8]	Explain RGB colour model. [Oct 2012][April 2012][April2011]	[6]
9]	Explain Z-Buffer Algorithm. [Oct 2012][April 2011][April 2010] April 2010]	[6]
10]	Why are hidden surface algorithms needed ? Explain any two algorithms used for removing hidden surfaces. [April 2012][oct 11][April2013]	[10]
11]	What is interpolation ? Explain Lagrange interpolation method. . [April 2012][oct 11]	[6]
12]	What are fractals ? Explain how fractal line algorithm can be used for generating fractal surface. . [April 2012][April2013]	[6]

13]	Explain the term control points and order of connectivity in curve drawing [April 2012]	[6]
14]	Write short notes on Painter's algorithm. [April 2012][oct 2011][April2011] April 2010]	[4]
15]	Explain the following : (i) Gouraud method of shading (ii) Color models[oct 2010][April 2010] (iii) Ray tracing (iv) CIE chromaticity diagram (v) Diffused illumination. (vi) Specular reflection [April 2012][April2013]	[10]
16]	What is surface rendering ? Explain Gouraud method of shading[Oct12,11][April 12]	[8]
17]	Explain the procedure to generate fractal lines and from that fractal surfaces. [oct 11]	[6]
18]	Write a short note on Binary space partitioning. [April 2011]?.[Oct 2010][April2013] April 2010]	[4]
19]	What is diffused illumination and point source illumination ? [April 2011]?.[Oct 2010][April2013] [April 2010]	[4]
20]	Explain Scanline algorithm for polygon filling and explain how it can be extended for hidden line removal.[Oct 2010]	[10]
21]	Explain Warnock algorithm. Why this algorithm is also called as area subdivision algorithm ?.[Oct 2010]	[8]
22]	Explain the term control points in curve drawing. How blending function is calculated for cubic polynomial curve ?[April 2010]	[8]
23]	Phong shading OR Transparency.[April 2010]	[8]

	Unit 6	
1]	Suggest a scheme to create an illusion of a spaceship moving away from the observer.[Oct 2012]	[6]
2]	What is the difference between conventional and computer based animations ? [Oct 2012],[April 2012]	[6]
3]	Suggest a scheme to create an illusion of a sky full of twinkling stars. [Oct 2012]	[6]
4]	Write a short note on Animation Languages. [Oct 2012]	[4]
5]	Explain a segment table with an example. What are the data structures used to implement the segment table ? [April 2012][April2013] April 2010]	[6]
6]	Explain the features of computer graphics and animation software 3D studio or Maya. Enlist its applications. [April 2012]	[6]
7]	Explain in detail the operations performed on a segment table. [April 2012][April2013]	[4]
8]	What is a segment ? How do we create it ? Why do we need segments ? Explain in detail the various operations of segments.[oct 2011].[Oct 2010]. [April 2010]	[10]
9]	Describe the steps required to produce real time animation. [oct 2011]	[6]
10]	Define animation and explain the methods of controlling the animation. Give different types of animation languages. [oct 2011][oct2010][April2013]	[8]
11]	Write the algorithm for the following : (i) Change of visibility attribute of segments (ii) Delete a segment (iii) Delete all segments.	[8]
12]	Explain with example, operations on segments. 1) Segment creation 2) Segment deletion 3) Segment renaming. [April 2011]	[8]
13]	Explain with example, advantages of segment tables. [April 2011]	[8]
14]	Discuss the concept of segmentation used in cricket animation with suitable example. Assume your animation is having at least 3 to 4 segments in it.[oct2010]	[10]
15]	Write a short note on 3D Studio/Maya	[4]