

Reg. No. :

--	--	--	--	--	--	--	--	--	--

Question Paper Code: 31855

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Fifth Semester

Information and Technology

01UIT505 - GRAPHICS WITH OPENGL

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. What is shear transformation matrix?
2. Define clipping.
3. List any four real time animation techniques.
4. What is the BSP-Tree method of visible surface detection?
5. What are the uses of a Chromaticity diagram?
6. State the difference between CMY and HSV color models.
7. Identify which shading method is faster and easier to calculate. Why?
8. Compare and contrast Flat and Smooth shading.
9. Define Julia set.
10. List the available Boolean operations on objects.

PART - B (5 x 16 = 80 Marks)

11. (a) Write in detail about two dimensional Geometric transformations. (16)

Or

(b) Explain the midpoint circle drawing algorithm. Calculate the pixel location approximating the first octant of a circle having centre at (4, 5) and radius 4 units using Bresenham's algorithm. (16)

12. (a) Describe in detail about the polygon and quadric surfaces. (16)

Or

(b) Explain in detail about three dimensional object representations with neat examples. (16)

13. (a) (i) Compare and Contrast RGB and CMY color models. (8)

(ii) Derive expressions for converting HSV color values to RGB values. (8)

Or

(b) Write the procedure to interactively draw three dimensional scenes using OpenGL. (16)

14. (a) How textures are added to faces? Explain with an example. (16)

Or

(b) Explain the following

(i) Adding texture to faces

(ii) Adding shadows of objects (16)

15. (a) What is ray tracing? Explain in detail about ray intersection with primitives. (16)

Or

(b) Design the algorithm for Nature scenery made of fractal triangles and explain with suitable fractal properties. (16)