

## ***B.Tech. Degree V Semester Examination November 2012***

### **CS 504 COMPUTER GRAPHICS** (2006 Scheme)

Time : 3 Hours

Maximum Marks : 100

#### **PART A** (Answer *ALL* questions)

(8 × 5 = 40)

- I. (a) Explain DDA line drawing algorithm.  
(b) Describe bundled attributes.  
(c) Explain window to viewport transformations.  
(d) Prove that two successive rotations are additive in composite 2D transformations.  
(e) What is Bezier curve? Explain its properties.  
(f) Explain fractal geometry methods.  
(g) Explain BSP tree method for visible surface detection.  
(h) Describe area subdivision method.

#### **PART B**

(4 × 15 = 60)

- II. Explain midpoint circle algorithm using an example. (15)  
**OR**  
III. (a) Explain flood fill polygon filling algorithm. (8)  
(b) Explain boundary fill polygon filling algorithm. (7)
- IV. Discuss the dimensional transformations in detail. Explain its homogeneous matrix representation. (15)  
**OR**  
V. Describe Cohen-Sutherland Line clipping algorithm in detail. (15)
- VI. (a) Explain how polygon surfaces are used in 3D object representation with an example. (8)  
(b) What is B-spline? Explain its properties and advantages. (7)  
**OR**  
VII. (a) Explain parallel projections. Derive transformation matrix for oblique parallel projection. (7)  
(b) Describe perspective projections. Derive transformation matrix for perspective projections. (8)
- VIII. (a) Explain Goraud shading. (8)  
(b) Explain Phong shading. (7)  
**OR**  
IX. (a) Explain 2 buffer algorithm. (8)  
(b) Discuss the depth sorting algorithm. (7)

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