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**Sixty Semester B.E. Degree Examination, December 2011**  
**Computer Graphics and Visualization**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting  
at least TWO questions from each part.**

**PART – A**

- 1 a. With a neat diagram, explain the components of a graphics system. (06 Marks)  
 b. With a neat diagram, explain the human visual system. (06 Marks)  
 c. In an API, a block box, explain the major groups of functions. (08 Marks)
- 2 a. With a neat diagram, discuss the color formation. Explain the additive and subtractive colors, indexed color and color solid concept. (12 Marks)  
 b. What are the control functions? Explain with examples. (08 Marks)
- 3 a. Which are the six classes of logical input devices? Explain. (06 Marks)  
 b. Discuss the request mode, sample mode and event modes, with the figures wherever required. (08 Marks)  
 c. Write a program, to draw a rotating square. (06 Marks)
- 4 a. Explain the translation, rotation and scaling with the suitable figures. (10 Marks)  
 b. Discuss the frames in open GL. (10 Marks)

**PART – B**

- 5 a. How do you achieve affine transformations by concatenation? Discuss. (10 Marks)  
 b. What are quaternions? With an example, explain its mathematical representations. (10 Marks)
- 6 a. With suitable sketches, explain the various kinds of views in computer graphics system. (10 Marks)  
 b. Discuss the polygonal shading and its types. (10 Marks)
- 7 a. Explain the phong lighting model. (10 Marks)  
 b. How is approximation of a sphere done by recursive subdivision? (10 Marks)
- 8 a. Explain the Cohen – Sutherland clipping. (10 Marks)  
 b. Explain the Anti – aliasing, with its types. (10 Marks)

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