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10IS665

# Sixth Semester B.E. Degree Examination, June / July 2013
## Computer Graphics and Visualizations

Time: 3 hrs. Max. Marks:100

**Note:** ***Answer any FIVE full questions, selecting atleast TWO question from each part.***



### PART – A

1 a. Discuss the graphics pipeline architecture, with the help of a functional schematic diagram. **(10 Marks)**

b. With neat diagram, explain the human visual system. **(06 Marks)**

c. Briefly explain any two applications of computer graphics. **(04 Marks)**

2 a. With a neat diagram, discuss the color formation. Explain the additive and subtractive colors, Indexed color and color solid concept. **(11 Marks)**

b. List out different open GL primitives, giving example for each. **(09 Marks)**

3 a. Write a program to draw a rotating square. **(06 Marks)**

b. List the various features that a good interactive program should include. **(04 Marks)**

c. Discuss the request mode, sample mode and event modes, with figures wherever required. **(10 Marks)**

4 a. Explain modeling a color cube in detail. **(10 Marks)**

b. Explain Affine transformations. **(10 Marks)**

### PART – B

5 a. What are Quaternious? With an example, explain its mathematical representations. **(10 Marks)**

b. Explain the basic transformation in 3D and represent in matrix form. **(10 Marks)**

6 a. With neat sketches, explain the various type of views that are employed in computer graphic systems. **(11 Marks)**

b. Derive equations for perspective projections and describe the specifications of a perspective camera view in open GL. **(09 Marks)**

7 a. Explain phong lighting model. Indicate the advantages and disadvantages. **(10 Marks)**

b. How is approximation of a sphere done by recursive subdivision? **(10 Marks)**

8 a. Explain Liang Barsky line clipping algorithm in detail. **(10 Marks)**

b. Explain the Cohen – Sutherlans line clipping algorithm in detail. **(10 Marks)**

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