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06CS65

Sixth Semester B.E. Degree Examination, December 2010
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 block diagram, explain the graphics pipeline architecture. **(12 Marks)**
b. Explain the elements of a graphics system, with a neat diagram. **(08 Marks)**

2 a. What are the graphics functions which give good API support? **(10 Marks)**
b. Write the different openGL primitives, with example for each primitive. **(10 Marks)**

3 a. Write a note on input mode. **(10 Marks)**
b. Explain how an event driven input can be programmed for a keyboard device. **(05 Marks)**
c. Explain how an event driven input can be performed for window events. **(05 Marks)**

4 a. Explain rotation, transformation and scaling, with respect to 2-dimensions. **(08 Marks)**
b. Explain the complete procedure of converting a world object frame into camera frame, using the model view matrix. **(12 Marks)**

PART – B

5 a. Explain how quaternions are used in rotation in a three-dimension space. **(10 Marks)**
b. Write a program rotating cube, with viewer movement. **(10 Marks)**

6 a. What are the simple projections? Obtain the 4×4 matrix representing simple projection. **(10 Marks)**
b. Explain the different classical views, with neat diagrams. **(10 Marks)**

7 a. Describe the Phong lighting model. Also, indicate advantages and disadvantages. **(10 Marks)**
b. Explain the classification of light material interactions, in openGL. **(10 Marks)**

8 Write short notes on:
a. Hidden surface removal
b. Antialiasing
c. Rasterigation
d. Cohen-Sutherland line clipping. **(20 Marks)**

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