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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. Rasterization
d. Cohen-Sutherland line clipping. (20 Marks)
