10CS65

Sixth Semester B.E. Degree Examination, June/July 2016
Computer Graphics & Visualization

Time: 3 hrs.

Max. Marks: 100

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

PART – A

1   a.   With neat diagrams, explain different graphics architectures.   (13 Marks)
    b.   With a neat diagram, explain the elements of a computer graphics system.   (07 Marks)

2   a.   Explain two forms of text. Mention GLUT library functions for each of the form.   (06 Marks)
    b.   Explain seven major groups of openGL graphics functions.   (07 Marks)
    c.   Explain index color model. How it is supported in GLUT library.   (07 Marks)

3   a.   What are the major characteristics that describe the logical behaviour of an input device? Explain how openGL provides the functionality of each of the classes of logical input devices.   (08 Marks)
    b.   What is double buffering? How it is implemented in openGL?   (05 Marks)
    c.   What is display list? Write openGL code segment that generate a blue colored square using display list.   (07 Marks)

4   a.   Explain different frames in openGL.   (08 Marks)
    b.   With the help of code segments, explain the modeling of colored cube and also explain bilinear interpolation.   (12 Marks)

PART – B

5   a.   Explain translation, scaling and rotation in a homogeneous coordinate system.   (10 Marks)
    b.   What is concatenation of transformation? Derive concatenated final matrix M for rotating a 3D object about a fixed point.   (10 Marks)

6   a.   With neat diagram explain the following projections in openGL along with APIs provided i) perspective ii) Parallel.   (10 Marks)
    b.   Explain different classical viewings   (10 Marks)

7   a.   Briefly explain the different classification of light and material interaction. How material properties are specified in openGL?   (10 Marks)
    b.   What are the different types of light sources? Explain.   (10 Marks)

8   a.   What are the basic implementation strategies? Explain.   (10 Marks)
    b.   What is clipper? Briefly explain Cohen Sutherland line clipping without code. Discuss four cases.   (10 Marks)

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