BE – 167

V Semester B.E. (CSE/ISE) Degree Examination, December 2016
(2K11 Scheme)
CI 55 : COMPUTER GRAPHICS

Time : 3 Hours Max. Marks : 100

***Instruction** : Answer **any five full** questions selecting atleast **two** from **each** Part.*

PART – A

1. a) Explain the application of computer graphics. **10**

   b) Explain the graphic system with a diagram. **5**

   c) Differentiate physical and synthetic images. **5**

2. a) Briefly explain the orthographic viewing with openGL functions for 2-D and 3-D viewing. Indicate the significance of projection plane and the viewing point in this. **10**

   b) List out different openGL primitives, giving examples for each. **10**

3. a) Explain the different control functions of openGL. **10**

   b) What are the various classes of logical input devices that are supported by open GL ? Explain the functionalities of these classes . What is Transformation ? Explain the different types of transformation supported in openGL along with functions. **10**

4. a) What is Transformation ? Explain the different types of Transformation supported in openGL along with functions. **12**

   b) With regard to modeling discuss the following : **8**

      i) data structures for object representation

      ii) bilinear interpolation

      iii) vertex arrays.

PART – B

P.T.O.

5. a) With illustrative example, explain how quaternions are used in rotations in a three dimensional space. **10**

   b) What is a homogeneous co-ordinate system ? Using this co-ordinate system represent all the basic 2D transformations. **10**

6. a) Write a note on hidden-surface removal. **5**

   b) Explain the gluLookAt function. **5**

   c) Briefly discuss the following along with the functions used for the purpose in openGL.
      i) perspective projections
      ii) orthogonal projections. **10**

7. a) Give the different classification of light material interactions. How are these supported in openGL ? **10**

   b) Explain the phong lighting model. Discuss the advantages and disadvantages of phong lighting model. **10**

8. a) Explain the Bresenham's line rasterization algorithm. **10**

   b) What is polygon clipping ? Explain the concept of polygon clipping with neat sketches. **10**

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