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06CS65

Sixth Semester B.E. Degree Examination, June/July 2019

Computer Graphics and Visualization

Time: 3 hrs. Max. Marks:100

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

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

PART – A

1 a. What is computer graphics? List the applications and explain any two of them. **(07 Marks)**
b. Explain any three components of graphics system with a neat diagram. **(06 Marks)**
c. Explain the imaging system of camera of pin hole. **(07 Marks)**

2 a. List API Graphics functions and explain any four of them. **(10 Marks)**
b. Explain Indexed colour model with relevant diagram. **(08 Marks)**
c. What is Aspect ratio? **(02 Marks)**

3 a. Explain the various logical input devices with its functionalities. **(10 Marks)**
b. What is measure process and device trigger? Explain the different input modes with diagram. **(10 Marks)**

4 a. Mention different frames of openGL. **(03 Marks)**
b. Explain modeling a color cube in detail. **(08 Marks)**
c. Explain affine transformations. **(09 Marks)**

PART – B

5 a. Explain any three transformations of Homogeneous coordinates. **(09 Marks)**
b. What is concatenation transformation? Explain rotation about a fixed point. **(09 Marks)**
c. Mention the advantages of quaternion. **(02 Marks)**

6 a. Explain the different views of computer graphics with diagram along with its functions available in openGL. **(12 Marks)**
b. Explain the Hidden surface removal algorithm with the significance of depth or Z buffer. **(08 Marks)**

7 a. Explain types of surfaces considered while interacting light with materials. **(06 Marks)**
b. Describe any 3 light sources in brief. **(06 Marks)**
c. Explain the Phong Lighting model. **(08 Marks)**

8 Write short notes on any four of the following:
a. Cohen-Sutherland clipping
b. Rasterization
c. Bresenham's algorithm
d. Antialising
e. Geometry pipeline
f. Fragment processing **(20 Marks)**

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