10CS65

Sixth Semester B.E. Degree Examination, July/August 2021
Computer Graphics & Visualization

Time: 3 hrs.

Max. Marks:100

Note: *Answer any FIVE full questions.*

1	a.	With a neat diagram, explain the components of a graphics system.	**(06 Marks)**
	b.	With a neat diagram, explain the human visual system.	**(06 Marks)**
	c.	With a neat block diagram, explain the graphics pipeline architecture.	**(08 Marks)**
2	a.	What are the graphics functions which give good API support? Explain them.	**(06 Marks)**
	b.	Explain RGB color and indexed color model.	**(06 Marks)**
	c.	What are the two classes of primitives OpenGL supports? Discuss various polygon types in OpenGL	**(08 Marks)**
3	a.	Which are the six classes of logical input devices? Explain.	**(06 Marks)**
	b.	What are the measure and trigger. Explain the different modes that application program can obtain from the measure of a device.	**(08 Marks)**
	c.	Describe window events and keyboard events.	**(06 Marks)**
4	a.	Explain : (i) Affine sums (ii) Convexity (iii) Dot and Cross products.	**(06 Marks)**
	b.	Explain rotation, transformation and scaling with respect to 2-dimensions.	**(06 Marks)**
	c.	Explain the modeling of colored cube and bilinear interpolation.	**(08 Marks)**
5	a.	What is concatenation of transformation? Derive concatenated final matrix M for rotating a 3D object about a fixed point.	**(10 Marks)**
	b.	What are quanternions? With an example, explain its mathematical representations.	**(10 Marks)**
6	a.	Explain the various types of views that are employed in computer graphics system with neat sketches.	**(10 Marks)**
	b.	Explain the hidden surface removal algorithm.	**(10 Marks)**
7	a.	Explain phong-lighting model. Indicate advantage and disadvantage of this method.	**(10 Marks)**
	b.	Discuss the polygonal shading and its types.	**(10 Marks)**
8	a.	What is a Clipper? Explain the Cohen-Sutherland clipping.	**(08 Marks)**
	b.	Describe DDA algorithm for scan conversion of line segment.	**(06 Marks)**
	c.	Write a note on antialiasing.	**(06 Marks)**

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