KUMARAGURU
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B.E DEGREE EXAMINATIONS: APRIL /MAY 2024

(Regulation 2018)

Seventh Semester

COMPUTER SCIENCE AND ENGINEERING

U18CSE0009: Graphics and Multimedia

COURSE OUTCOMES

CO1: Illustrate graphics input and output primitives.

CO2: Construct 2D and 3D geometric transformations on objects.

CO3: Summarize the graphics modeling process.

CO4: Apply the techniques of multimedia, compression, communication, and authoring.

CO5: Design a simple application with animation.

Time: Three Hours   **Maximum Marks: 100**

Answer all the Questions:-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	Provide examples of output primitives used in real-world applications.	CO1	[K2]
2.	What are graphics input primitives?	CO1	[K2]
3.	What is geometric transformations in 2D graphics?	CO2	[K2]
4.	Define clipping and write its importance in computer graphics.	CO2	[K3]
5.	Outline the advantages of color models.	CO3	[K2]
6.	Write the significance of splines. Provide examples.	CO3	[K2]
7.	What are NURBS in 3D modelling?	CO4	[K2]
8.	How to specify Object motion in an animation system?	CO4	[K2]
9.	State the role of networking protocols.	CO5	[K2]
10.	Write the key components of a multimedia system.	CO5	[K2]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.	a)	Write the Bresenham's line drawing algorithm, Explain why this algorithm is considered more efficient compared to Digital Differential Analyzer(DDA) algorithm.	8	CO1	[K3]
	b)	Given the circle radius r = 10, demonstrate the midpoint circle drawing algorithm by determining positions along the circle octant in the first quadrant from x = 0 to x = y.	8	CO1	[K3]
12.	a)	Explain the Sutherland-Hodgman polygon clipping algorithm.	8	CO2	[K2]
	b)	How are coordinates transformed from the viewport space to the screen space to the screen space?	8	CO2	[K2]
13.	a)	Provide examples of applications where 2D geometric transformations are used.	8	CO2	[K2]
	b)	Explain the types of 2D transformations commonly used in computer graphics.	8	CO2	[K2]
14.	a)	Explain in detail the three-dimensional rotation transformation giving their matrix representation.	8	CO3	[K2]
	b)	Explain the CIE chromaticity diagram.	8	CO3	[K2]
15.	a)	Define surface modelling in 3D graphics and provide examples of its applications.	8	CO4	[K2]
	b)	Design a Storyboard layout and accompanying key frame for an animation of a single polyhedron.	8	CO4	[K2]
16.	a)	Describe the process of multimedia authoring and the importance of user interface design in creating engaging multimedia content.	8	CO5	[K2]
	b)	Explain the design principles of Virtual Reality systems and their components.	8	CO5	[K3]

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