Code No: **R42031**

R10

IV B.Tech II Semester Supplementary Examinations, July/Aug - 2015
INTERACTIVE COMPUTER GRAPHICS
(Mechanical Engineering)

Time: 3 hours   **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
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1	a)	What are the Applications of computer graphics? Explain graphic system.	[8]
	b)	Illustrate raster scan and random scan systems.	[7]
2	a)	Explain Bresenham's line drawing algorithm.	[7]
	b)	What is a polygon? Write any two polygon filling algorithms.	[8]
3	a)	Define window and view port. Derive the transformation matrix for viewing transformation.	[8]
	b)	Explain the features of Sutherland-Hodgeman clipping algorithm.	[7]
4	a)	Describe about Bezier curve and B-spline curve.	[8]
	b)	Write about polygon and quadric surfaces.	[7]
5	a)	How does ambient light source is differ from a point light source or parallel beam of light.	[7]
	b)	List and compare shading algorithms.	[8]
6	a)	Describe back face method for visible surface detection.	[7]
	b)	Explain Z-buffer algorithm.	[8]
7	a)	Explain the different stages computer based animation.	[7]
	b)	What is animation? Write about any two animation techniques.	[8]
8	a)	Define multimedia. Explain main properties of multimedia system.	[7]
	b)	Illustrate Time base and presentation authoring tools in multimedia.	[8]

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Set No. 2

IV B.Tech II Semester Supplementary Examinations, July/Aug - 2015
INTERACTIVE COMPUTER GRAPHICS
(Mechanical Engineering)

Time: 3 hours   **Max. Marks: 75**
Answer any FIVE Questions
All Questions carry equal marks
*****

1 a) Explain the construction of typical CRT display devices. What are its
       advantages and disadvantages?   [7]
   b) Discuss about graphics monitors and work stations.   [8]

2 a) Write an algorithm for line generation using DDA algorithm.   [8]
   b) Explain the steps involved in scan line algorithm for polygon filling   [7]

3 a) List the basic 2-D transformation techniques used. Give the corresponding
       matrix representation.   [7]
   b) Write the steps involved in Cohen Sutherland line clipping algorithm.   [8]

4 a) Differentiate between spline curves and Bezier curves with illustrations.   [8]
   b) Write briefly about solid modeling schalars.   [7]

5 a) Discuss diffuse reflection Lambert's cosine law and point source illumination. [8]
   b) Explain the phong's shading algorithm.   [7]

6 a) Describe about depth buffer visible surface detection method.   [8]
   b) Explain scan line surface detection method.   [7]

7 a) Write different types of animations and animation languages.   [8]
   b) Write short notes on key frame system and motion specification.   [7]

8 a) Illustrate the multimedia technology and architecture.   [8]
   b) Describe the multimedia object oriented authoring tools.   [7]

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INTERACTIVE COMPUTER GRAPHICS
(Mechanical Engineering)

Time: 3 hours   **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

1 a) List the application areas of computer graphics? Explain abut input devices.   [8]

   b) What are raster scan and random scan display in graphical systems? Compare the essential features of both.   [7]

2 a) Write the midpoint circle drawing algorithm and explain how it works with an example.   [7]

   b) Write boundary and flood fill algorithms and discuss the merits and demerits.   [8]

3 a) Explain Cohen Sutherland line clipping algorithm with an example.   [8]

   b) Derive equations for window-viewport transformation.   [7]

4 a) Discuss in details about Bezier curves and surfaces.   [8]

   b) What is spline? Write about B-spline curves.   [7]

5 a) What is reflection? Explain specular reflection.   [7]

   b) Write the steps involved in constant intensity shading algorithm.   [8]

6 a) Explain back-face visible surface detection method.   [7]

   b) Describe about depth buffer detection method.   [8]

7 a) What is animation? How to design animation sequence.   [7]

   b) Explain about raster animation and key frame system.   [8]

8 a) List and explain the basic tools that are required for the multimedia software   [7]

   b) Describe icon based multimedia authoring tools.   [8]

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(Mechanical Engineering)

Time: 3 hours   **Max. Marks: 75**
Answer any FIVE Questions
All Questions carry equal marks
*****

1 a) What is the importance of computer graphics in various fields? Write about graphic system.   [7]
   b) List out input devices and write the steps involved in input device handling algorithm.   [8]

2 a) Write the Bresenham line generation algorithm and scan convert a line from (1, 2) and (8, 4).   [7]
   b) Write the steps involved in boundary and flood fill polygon filling algorithms.   [8]

3 a) Derive transformation matrix for rotation with respect to origin.   [8]
   b) What is polygon clipping? Explain polygon clipping with suitable example.   [7]

4 a) Describe Spline and Hermite curves.   [8]
   b) Explain the polygon surfaces.   [7]

5 a) Illustrate transparency and shadows   [7]
   b) Explain constant intensity and phong's shading algorithms.   [8]

6 a) Why visual surface detection is important in graphics? How are the detection techniques classified   [7]
   b) Explain about Back-face detection method.   [8]

7   Discuss in details about animation.   [15]

8 a) Explain the synchronization issues in multimedia communication systems.   [7]
   b) Describe the time based and presentation authoring tools.   [8]

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