Code No: RR221402 **RR** **Set No. 2**

II B.Tech II Semester Examinations,December 2010
COMPUTER GRAPHICS
Mechatronics

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Explain the perspective projection for projecting 3D objects on a 2D view surface.
   (b) Write a procedure for rotating a given object about any spcified rotation axis. [8+8]

2. Explain the logic of the Sutherland-Hodgman algorithm with the help of a neat flowchart. Illustrate the working of your flowchart with the help of a suitable example. [16]

3. (a) Explain the winding-number method for determining whether a point is interior of a polygon. Demonstrate with suitable examples.
   (b) Explain the flood-fill algorithm for filling polygons. [8+8]

4. Outline the z-buffer algorithm. List the advantages and disadvantages of the z-buffer algorithm. [16]

5. (a) Describe the properties of B spline approximations.
   (b) What is the difference between Bezier curve and B-spline curve? [10+6]

6. Find the normalization transformation that maps a window whose lower left corner is at (1,1) and upper right corner is at (3,5) onto
   (a) a view port that is the entire normalized device screen and
   (b) a view port that has the lower left corner at (0,0) and upper right corner at (1/2,1/2). [16]

Explain the following:

7. (a) Shear transformations
   (b) Image transformations. [8+8]

8. (a) Explain the concepts of aliasing and antialiasing. How can the effects of aliasing be minimized?
   (b) Write short notes on frame buffer. [8+8]

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Code No: RR221402 **RR** **Set No. 4**

II B.Tech II Semester Examinations,December 2010
COMPUTER GRAPHICS
Mechatronics

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Explain the winding-number method for determining whether a point is interior of a polygon. Demonstrate with suitable examples.
   (b) Explain the flood-fill algorithm for filling polygons. [8+8]
2. Explain the following:
   (a) Shear transformations
   (b) Image transformations. [8+8]
3. Find the normalization transformation that maps a window whose lower left corner is at (1,1) and upper right corner is at (3,5) onto
   (a) a view port that is the entire normalized device screen and
   (b) a view port that has the lower left corner at (0,0) and upper right corner at (1/2,1/2). [16]
4. (a) Explain the perspective projection for projecting 3D objects on a 2D view surface.
   (b) Write a procedure for rotating a given object about any spcified rotation axis. [8+8]
5. (a) Explain the concepts of aliasing and antialiasing. How can the effects of aliasing be minimized?
   (b) Write short notes on frame buffer. [8+8]
6. Outline the z-buffer algorithm. List the advantages and disadvantages of the z-buffer algorithm. [16]
7. Explain the logic of the Sutherland-Hodgman algorithm with the help of a neat flowchart. Illustrate the working of your flowchart with the help of a suitable example. [16]
8. (a) Describe the properties of B spline approximations.
   (b) What is the difference between Bezier curve and B-spline curve? [10+6]

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Code No: RR221402 **RR** **Set No. 1**

II B.Tech II Semester Examinations,December 2010
COMPUTER GRAPHICS
Mechatronics

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Explain the concepts of aliasing and antialiasing. How can the effects of aliasing be minimized?
   (b) Write short notes on frame buffer. [8+8]
2. (a) Explain the perspective projection for projecting 3D objects on a 2D view surface.
   (b) Write a procedure for rotating a given object about any spcified rotation axis. [8+8]
3. Explain the logic of the Sutherland-Hodgman algorithm with the help of a neat flowchart. Illustrate the working of your flowchart with the help of a suitable example. [16]
4. Outline the z-buffer algorithm. List the advantages and disadvantages of the z-buffer algorithm. [16]
5. Explain the following:
   (a) Shear transformations
   (b) Image transformations. [8+8]
6. (a) Explain the winding-number method for determining whether a point is interior of a polygon. Demonstrate with suitable examples.
   (b) Explain the flood-fill algorithm for filling polygons. [8+8]
7. Find the normalization transformation that maps a window whose lower left corner is at (1,1) and upper right corner is at (3,5) onto
   (a) a view port that is the entire normalized device screen and
   (b) a view port that has the lower left corner at (0,0) and upper right corner at (1/2,1/2). [16]
8. (a) Describe the properties of B spline approximations.
   (b) What is the difference between Bezier curve and B-spline curve? [10+6]

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Code No: RR221402 **RR** **Set No. 3**

II B.Tech II Semester Examinations,December 2010
COMPUTER GRAPHICS
Mechatronics

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Describe the properties of B spline approximations.
   (b) What is the difference between Bezier curve and B-spline curve? [10+6]
2. (a) Explain the perspective projection for projecting 3D objects on a 2D view surface.
   (b) Write a procedure for rotating a given object about any spcified rotation axis. [8+8]
3. (a) Explain the concepts of aliasing and antialiasing. How can the effects of aliasing be minimized?
   (b) Write short notes on frame buffer. [8+8]
4. Outline the z-buffer algorithm. List the advantages and disadvantages of the z-buffer algorithm. [16]
5. Find the normalization transformation that maps a window whose lower left corner is at (1,1) and upper right corner is at (3,5) onto
   (a) a view port that is the entire normalized device screen and
   (b) a view port that has the lower left corner at (0,0) and upper right corner at (1/2,1/2). [16]
6. Explain the logic of the Sutherland-Hodgman algorithm with the help of a neat flowchart. Illustrate the working of your flowchart with the help of a suitable example. [16]
7. Explain the following:
   (a) Shear transformations
   (b) Image transformations. [8+8]
8. (a) Explain the winding-number method for determining whether a point is interior of a polygon. Demonstrate with suitable examples.
   (b) Explain the flood-fill algorithm for filling polygons. [8+8]

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