Code No: RR320502　　　　　　| **RR** |　　　　| **Set No. 2** |

III B.Tech II Semester Examinations,December 2010
COMPUTER GRAPHICS
Computer Science And Engineering

Time: 3 hours　　　　　　　　　　　　　　　　　　　　　　Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
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1. (a) Discuss about the characteristics of the following illumination parameters.

    i. Diffuse reflection
    ii. Specular reflection and
    iii. Refraction.

   (b) At a surface point p, if the surface normal, light vector and sight vectors are given by n = j, L = -I + 2j-k and s = I + 1.5j + 05k respectively, find the vector of reflected ray and the angle it is making with surface normal. [9+7]

2. Discuss about the techniques to achieve the simple animation effects. [16]

3. What is meant by aliasing? Discuss about the two antialiasing methods. [16]

4. (a) Demonstrate with suitable figures how the arbitrary vector L passing through the origin in 3-D space aligns with Z-axis, in two steps.

   (b) List the sequence of operations to perform a φ -degrees rotation about vector L. [8+8]

5. (a) Explain about the conversion from RGB to HLS system.

   (b) Describe the unit cube defined in R, G and B axes. [8+8]

6. (a) Explain the terms

    i. Framebuffer
    ii. Resolution

   (b) Suppose an RGB raster system is to be designed using 8 inch by 10 inch screen with a resolution of 100 pixels per inch in each direction. If we want to store 6 bits per primary color per pixel, how much storage (in bytes) do we need for the frame buffer? [10+6]

7. (a) Discuss the steps involved in mid-point subdivision algorithm.

   (b) What are the limitations of mid-point subdivision algorithm? [8+8]

8. (a) Reflect the point p(10,10) about the line y=x+2 using 2-D transformations.

   (b) Rotate the point p(2,-4) about the origin 45^0 in clock-wise direction. [8+8]

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Code No: RR320502 | **RR** | **Set No. 4**

III B.Tech II Semester Examinations,December 2010
COMPUTER GRAPHICS
Computer Science And Engineering

Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
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1. (a) Discuss the steps involved in mid-point subdivision algorithm.

   (b) What are the limitations of mid-point subdivision algorithm?   [8+8]

2. (a) Discuss about the characteristics of the following illumination parameters.

      i. Diffuse reflection
      ii. Specular reflection and
      iii. Refraction.

   (b) At a surface point p, if the surface normal, light vector and sight vectors are given by n = j, L = -I + 2j-k and s = I + 1.5j + 05k respectively, find the vector of reflected ray and the angle it is making with surface normal. [9+7]

3. Discuss about the techniques to achieve the simple animation effects.   [16]

4. (a) Demonstrate with suitable figures how the arbitrary vector L passing through the origin in 3-D space aligns with Z-axis, in two steps.

   (b) List the sequence of operations to perform a φ -degrees rotation about vector L.   [8+8]

5. What is meant by aliasing? Discuss about the two antialiasing methods.   [16]

6. (a) Explain the terms

      i. Framebuffer
      ii. Resolution

   (b) Suppose an RGB raster system is to be designed using 8 inch by 10 inch screen with a resolution of 100 pixels per inch in each direction. If we want to store 6 bits per primary color per pixel, how much storage (in bytes) do we need for the frame buffer?   [10+6]

7. (a) Explain about the conversion from RGB to HLS system.

   (b) Describe the unit cube defined in R, G and B axes.   [8+8]

8. (a) Reflect the point p(10,10) about the line y=x+2 using 2-D transformations.

   (b) Rotate the point p(2,-4) about the origin 45^0 in clock-wise direction.   [8+8]

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2

Code No: RR320502 $\boxed{\textbf{RR}}$ $\boxed{\textbf{Set No. 1}}$

III B.Tech II Semester Examinations,December 2010
COMPUTER GRAPHICS
Computer Science And Engineering

Time: 3 hours Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
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1. (a) Reflect the point p(10,10) about the line y=x+2 using 2-D transformations.

   (b) Rotate the point p(2,-4) about the origin 45^0 in clock-wise direction. [8+8]

2. (a) Demonstrate with suitable figures how the arbitrary vector L passing through the origin in 3-D space aligns with Z-axis, in two steps.

   (b) List the sequence of operations to perform a φ -degrees rotation about vector L. [8+8]

3. (a) Discuss the steps involved in mid-point subdivision algorithm.

   (b) What are the limitations of mid-point subdivision algorithm? [8+8]

4. (a) Explain about the conversion from RGB to HLS system.

   (b) Describe the unit cube defined in R, G and B axes. [8+8]

5. (a) Explain the terms
      i. Framebuffer
      ii. Resolution

   (b) Suppose an RGB raster system is to be designed using 8 inch by 10 inch screen with a resolution of 100 pixels per inch in each direction. If we want to store 6 bits per primary color per pixel, how much storage (in bytes) do we need for the frame buffer? [10+6]

6. Discuss about the techniques to achieve the simple animation effects. [16]

7. (a) Discuss about the characteristics of the following illumination parameters.
      i. Diffuse reflection
      ii. Specular reflection and
      iii. Refraction.

   (b) At a surface point p, if the surface normal, light vector and sight vectors are given by n = j, L = -I + 2j-k and s = I + 1.5j + 05k respectively, find the vector of reflected ray and the angle it is making with surface normal. [9+7]

8. What is meant by aliasing? Discuss about the two antialiasing methods. [16]

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RR **Set No. 3**

III B.Tech II Semester Examinations,December 2010
COMPUTER GRAPHICS
Computer Science And Engineering

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

Answer any FIVE Questions
All Questions carry equal marks
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1. (a) Reflect the point p(10,10) about the line y=x+2 using 2-D transformations.
   (b) Rotate the point p(2,-4) about the origin 45^0 in clock-wise direction.   [8+8]

2. What is meant by aliasing? Discuss about the two antialiasing methods.   [16]

3. (a) Explain the terms
      i. Framebuffer
      ii. Resolution
   (b) Suppose an RGB raster system is to be designed using 8 inch by 10 inch screen with a resolution of 100 pixels per inch in each direction. If we want to store 6 bits per primary color per pixel, how much storage (in bytes) do we need for the frame buffer?   [10+6]

4. (a) Explain about the conversion from RGB to HLS system.
   (b) Describe the unit cube defined in R, G and B axes.   [8+8]

5. (a) Discuss about the characteristics of the following illumination parameters.
      i. Diffuse reflection
      ii. Specular reflection and
      iii. Refraction.
   (b) At a surface point p, if the surface normal, light vector and sight vectors are given by n = j, L = -I + 2j-k and s = I + 1.5j + 05k respectively, find the vector of reflected ray and the angle it is making with surface normal. [9+7]

6. (a) Demonstrate with suitable figures how the arbitrary vector L passing through the origin in 3-D space aligns with Z-axis, in two steps.
   (b) List the sequence of operations to perform a φ -degrees rotation about vector L.   [8+8]

7. Discuss about the techniques to achieve the simple animation effects.   [16]

8. (a) Discuss the steps involved in mid-point subdivision algorithm.
   (b) What are the limitations of mid-point subdivision algorithm?   [8+8]

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