

## MARKING SCHEME

**Course No : CSUC471**      Date : 3/10/04      T1 ( Closed Book)  
**Course Title : Computer Graphics**  
Faculty : Sujala D Shetty

1. Eight Way Symmetry , circle points – 2 marks
  2. Explanation of Midpoint Circle generation algorithm with derivation of all the terms – 3 marks
  3. Algorithm and rounding of the fractional term – 2 marks
  4. Second order differences – 3 marks
- 
2. i) Explain the working of the LCD. Explain clearly the function of each of the six layers – 3 marks. Technique of matrix addressing – 1 mark
  - ii) Explain the random scan and the raster scan – 2 marks.  
Compare – 2 marks
- 
3. Short notes explain each of the terms – 1 + 1 mark

**BITS, PILANI - DUBAI CAMPUS  
KNOWLEDGE VILLAGE, DUBAI**

**COMPUTER GRAPHICS(Elective) CSUC471 Test 1(Closed Book)**

**Duration : 50 Mins Max marks : 20 Weightage : 20% Date : 3-10-04**

---

1. Explain how a circle can be plotted using the midpoint circle generation algorithm. And also explain how it can be improvised to use the second order differences for circle generation. - 10 marks
2. Explain the working of the LCD ( liquid crystal display) - 4 marks
3. Compare the working of the Random scan and the Raster scan - 4 marks
4. Define the following terms
  - a. Addressability
  - b. Resolution- 2 marks

**BITS, PILANI - DUBAI CAMPUS  
KNOWLEDGE VILLAGE, DUBAI**

**COMPUTER GRAPHICS (Elective) CSUC471 Comprehensive Exam**  
Duration : 3Hrs Max marks : 40 Weightage : 40% Date : 9-1-05

---

**Note : Answer all questions**

1. Obtain the midpoint line drawing algorithm, which can draw lines with positive slope less than or equal to 1. Trace the above algorithm while drawing a line from (20,30) to (30,40) - 3 + 1 marks
2. What does clipping mean, give it's significance. Explain with the algorithm the Cohen-Sutherland line clipping algorithm. - 5 marks
3. Differentiate between the various types of parallel projection - 3 marks
4. Obtain the perspective projection matrix for the projection of a point on the view plane  $Z=0$  and the center of projection on the negative  $z$  axis at a distance of  $d$  from the origin. - 4 marks
5. Explain the various methods of polygon mesh representation. Compare them. - 4 marks
6. What do you mean by spatial partitioning representation in solid modeling. Explain any one technique. - 4 marks
7. With examples for each, explain any two types of animation languages. - 4 marks
8. Give short notes for the following
  - a. Filling polygons
  - b. Affine transformations
  - c. Achromatic light
  - d. Kinematics & Dynamics 1.5 X 4 = 6 marks
9. State whether the following are true or false and justify your answer
  - a. For the most part, "computer graphics" and "image processing" are synonymous.
  - b. Frame buffers are used very widely in display devices. - (1 X 2 = 2 marks)

10. Fill in the blanks with appropriate words.

a. . What do you get when you add white pigment to a pure color \_\_\_\_\_

b. A \_\_\_\_\_ followed by a \_\_\_\_\_ is required to convert the view volume of a perspective oblique projection to a parallelepiped?

c. . Every color that we perceive is represented by a distinct frequency in the electromagnetic spectrum true / false \_\_\_\_\_

d. If it doesn't move, it's not animated. (true / false ) \_\_\_\_\_.

e. The purpose of a control grid in a CRT is to \_\_\_\_\_.

f. The light must be \_\_\_\_\_ in order to pass through the LCD.

g. Suppose the number of points around an ellipse is 2,400. The positions of approximately \_\_\_\_\_ points (relative to the center of the ellipse) need to be computed using a DDA algorithm or Bresenham algorithm or similar algorithm

- (8X.5=4 marks)