

Lab

SE / Sem IV

Computer Graphics

9/12/10  
GT-6459

VI-Oct-10-36

Con. 5873-10.

( 3 Hours )

[ Total Marks : 100

- N.B. :** (1) Question No. 1 is **compulsory**.  
 (2) Attempt any **four** questions from Q. Nos. 2 to 7.  
 (3) Assume suitable data if **necessary**.

- |    |   |    |
|----|---|----|
| 1. | (a) Explain character Generation methods.   | 5  |
|    | (b) What is Phong's Shading Model ?   | 5  |
|    | (c) List and explain operations on segments.  | 5  |
|    | (d) Draw matrices for representing following operations :-                                  | 5  |
|    | (i) Translation   |    |
|    | (ii) Scaling  |    |
|    | (iii) Rotation.   |    |
| 2. | (a) Derive Bresenham's line drawing algorithm.  | 10 |
|    | (b) Write pseudocodes for boundary fill and flood fill procedure.                           | 10 |
| 3. | (a) Derive matrices for Rotation about an arbitrary point.                                  | 10 |
|    | (b) Explain Warnock's Algorithm   | 10 |
| 4. | (a) What do you understand by Diffuse Illumination and Point Source Illumination ?          | 5  |
|    | (b) Write a short note on Bezier Curves ?   | 10 |
|    | (c) Write down all the matrices for Reflection for -  | 5  |
|    | (i) line $y = 0$  |    |
|    | (ii) line $x = 0$   |    |
|    | (iii) line $y = x$  |    |
|    | (iv) line $y = -x$  |    |
|    | (v) about origin.   |    |
| 5. | (a) Derive Mid point circle algorithm.  | 10 |
|    | (b) Explain Text clipping with help of appropriate examples.                                | 10 |
| 6. | (a) What do you mean by specular Reflection ?   | 5  |
|    | (b) Explain fractals in brief.  | 5  |
|    | (c) What is a Display file structure ? Hence explain the need for display file interpreter. | 10 |
| 7. | (a) Illustrate inside-outside tests with example.   | 10 |
|    | (b) Explain Midpoint Subdivision Algorithm.   | 10 |