BT-I/D-21   **41024**

INTRODUCTION TO COMPUTER PROGRAMMING
CSE-101N

Time : Three Hours]   [Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. Explain the working and operating characteristics of the various graphics devices in detail. **15**

2. (a) Write and explain the scan line polygon filling algorithm. **7**

   (b) Write and explain Bresenham's algorithm for drawing a line. **8**

Unit II

3. (a) What are the various text clipping methods in computer graphics ? Explain. **7**

   (b) Write and explain the Cohen-Sutherland algorithm for line clipping. **8**

4. What is a viewing pipeline ? Differentiate between window port and view port in computer graphics. How can you perform window to viewport transformation ? Explain in

detail. **15**

Unit III

5. Write short notes on the following : **15**
 (i) Surface Rendering
 (ii) Depth Cueing.

6. (a) Prove that the multiplication of three-dimensional transformation matrices for each of the following sequence of operations in commutative : **9**
  (i) Any *two* successive translations.
  (ii) Any *two* successive scaling operations
  (iii) Any *two* successive rotations about any *one* of the coordinate axes.
 (b) What are the various types of viewing coordinates in three-dimensional viewing ? **6**

Unit IV

7. (a) Discuss the various computer animation functions in brief. **5**
 (b) Write and explain the area coherence algorithm for hidden surface removal. **10**

8. Discuss the various methods to display spline curves and surfaces in detail. **15**