

16559(D) - DEC 2011

**MCA 5th Semester Examination**

**Computer Graphics (NS)**

**MCA-501**

**Time : 3 Hours**

**Max. Marks : 60**

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

**Note :** Attempt five questions in all selecting one from each sections A, B, C, D and Section E is compulsory.

**SECTION - A**

1. Write a short note on following:
  - (a) Raster and random scan displays.
  - (b) Impact and non impact printers.
  - (c) DVST.
  - (d) LCDs. (3×4=12)
2. What do you mean by input devices? List them all. Explain the working of any three. (12)

**SECTION - B**

3. Discuss DDA line drawing algorithm in detail. Also give its advantages and disadvantages. (12)
4. Find the transformation matrix that transforms the square ABCD whose centre is at (2, 2) is reduced to half of its size, with centre still remaining at (2, 2). The coordinates of square ABCD are A(0,0), B(0,4), C(4,4) and D(4,0). Find the coordinates of new square. (12)

**SECTION - C**

5. Why do you need clipping? Discuss Cohen-Sutherland line clipping algorithm in detail. (12)
6. Discuss geometric 3D- transformations in detail. (12)

**SECTION - D**

7. Discuss various surface rendering methods in detail. (12)
8. Write the following algorithms:
  - (a) Z-buffer algorithm.
  - (b) Painters algorithm. (12)

**SECTION - E**

9. Explain the following ( Any six).
  - (a) Role of frame buffer.
  - (b) Aspect ratio.
  - (c) Resolution.
  - (d) Antialiasing.
  - (e) Flodd fill.
  - (f) Segment.
  - (g) Bezier curves.
  - (h) B-spline curves.
  - (i) Specular reflection.
  - (j) Dithering. (2×6=12)