Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

MCA (2013 and 2019 Batch) (Sem.–4)

INTERACTIVE COMPUTER GRAPHICS

Subject Code : MCA-403

M.Code : 71417

Time : 3 Hrs. Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. **SECTIONS-A, B, C & D contains TWO questions each carrying TWENTY marks each and students have to attempt any ONE question from each SECTION.**
2. **SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.**

SECTION-A

1. What is Computer Graphics? What are the applications of computer graphics?

2. Draw a cross sectional diagram of raster-scan CRT and discuss its major components and working.

SECTION-B

3. Describe the Bresenham's algorithm for plotting a straight line. Also explain the working of the algorithm with an example.

4. Explain the Sutherland Hodgeman polygon clipping algorithm and discuss its working.

SECTION-C

5. What are the various 3-D transformations? Discuss in detail.

6. What are Fractals? What is their use? Discuss the classification of fractals with examples.

SECTION-D

7. Discuss Painter's algorithm for visible surface detection.

8. Discuss and compare Gouraud shading and Phong shading techniques.

SECTION-E

9. **Write briefly :**

   a) Differentiate between interactive and passive computer graphics.

   b) What is display processor?

   c) Define Anti-Aliasing.

   d) What are the attributes of a line?

   e) What are composite transformations?

   f) What is the difference between impact and non-impact printers?

   g) Differentiate between illumination and shading.

   h) Write the matrix representation for 2D rotation of an object point $^{-\circ}$ about the origin.

   i) What is Shearing? Write the matrix for 2D shearing,

   j) What is oblique projection?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.