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

Total No. of Questions : 09

MCA (2019 & Onward) (Sem.–4)

INTERACTIVE COMPUTER GRAPHICS

Subject Code : MCA-403

M.Code : 74121

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTIONS-A, B, C & D contains TWO questions each carrying TEN 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. a) Explain the Architecture of Random and Raster Scan Systems.

   b) Explain different Color Generating Techniques.

2. List all applications of Computer Graphics.

SECTION-B

3. a) Explain different Character Generation Techniques.

   b) Differentiate between Concave and Convex Polygon. Write the Algorithm for Polygon Clipping.

4. a) Draw Ellipse drawing algorithm.

   b) Describe various 2-Ds Geometric Transformations.

SECTION-C

5. Explain the different types of Curves in detail? Classify Fractals.

6. a) Explain the Composite Transformation for 3-D objects with example.

   b) Write note on 3-D viewing.

SECTION-D

7. a) Explain the method for adding Surface Texture.

   b) How are Diffuse and Specular models computed in a Shading model?

8. a) Write notes on Halftoning and Dithering Techniques.

   b) Write notes on Z-Buffer and Painters Algorithms.

SECTION-E

9. **Give short answers of the following :**

   a) Morphing of Objects.

   b) Perspective Projection.

   c) Shearing in 3-D.

   d) Homogeneous Co-ordinate System.

   e) Effect of scan converting a Line.

   f) Flood Fill Technique.

   g) Graphic Cards.

   h) RGB Color Model.

   i) Color lookup Table.

   j) Hidden line Algorithm using Sub-division Technique.

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.