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Total No. of Pages : 02

Total No. of Questions : 09

MCA (2015 & 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.