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Total No. of Pages: 02

Total No. of Questions: 09

MCA (2015 & Onwards) (Sem. – 4)
INTERACTIVE COMPUTER GRAPHICS

M Code: 74121

Subject Code: MCA-403

Paper ID: [74121]

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks and students has to attempt any ONE question from each SECTION.
2. SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.
3. Use of non-programmable scientific calculator is allowed.

SECTION A

1. What is Computer Graphics? Explain various applications of computer Graphics. 10
2. Differentiate the Random Scan and Raster Scan Systems. 10

SECTION B

3. Define circle. Explain Bresenham's mid-point circle algorithm. 10
4. Explain the following: -
 - a) Sutherland Hodgeman polygon clipping algorithm 5
 - b) Area filling techniques 5

SECTION C

5. Define transformation. Explain various 3-dimensional transformations used in graphics. 10
6. Write notes on the following: -
 - a) Bezier curves and its properties 5
 - b) Classification of fractals 5

SECTION D

7. Write notes on the following: -
- a) Specular reflection 5
 - b) Morphing of objects 5
8. What is use of Gouraud shading? Explain how it is different from Phong shading. 10

SECTION E

9. a) What are digitizers?
b) Define aspect ratio.
c) What is use of look-up table?
d) Define CMY.
e) What is scan conversion process?
f) Define Projection.
g) Define line-clipping.
h) What is diffuse reflection?
i) What are Cartesian coordinates?
j) Define DVST.