Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   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. How Color CRT Monitors are different from Liquids Crystal Display (LCD) Systems? Explain their working also.

2. a) What do you mean by raster scan and random scan display?

   b) Why we need color images? Explain RGB and CMY color models.

SECTION-B

3. Write down and explain the midpoint circle drawing and Ellipse drawing algorithm with the help of suitable example.

4. What do you mean by Polygon clipping? Explain Sutherland-Hodgeman Polygon Clipping with an example.

SECTION-C

5. What do you mean by Reflection, Scaling and Shearing? Explain in Three Dimension using Homogenous Coordinate system.

6. Derive the blending function for a Bezier Surface 3×3.

SECTION-D

7. Write and explain the depth-buffer algorithm which is used to detect visible surfaces.

8. Explain in detail gouraud and Phong method for shading.

SECTION-E

9. **Answer briefly :**

   a) Define spatial resolution.

   b) Define random scan.

   c) Explain difference between parallel and perspective projections.

   d) What do you mean by pseudo-color image?

   e) Discuss shadow masking.

   f) What is anti aliasing?

   g) Discuss shearing.

   h) Define quadric surface.

   i) What do you mean by half toning?

   j) What are vanishing points?

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.