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

Total No. of Questions : 07

BCA (Sem.–5)

COMPUTER GRAPHICS

Subject Code : UGCA-1934

M.Code : 90317

Date of Examination : 24-05-2023

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. Write briefly:

a) What are the advantages and disadvantages of touch screen input devices?

b) How do virtual reality environments affect user perception and interaction with digital content?

c) How does anti-aliasing improve the quality of scan-converted circles?

d) What is the purpose of clipping in computer graphics and what are the common types of clipping?

e) What is the difference between affine and projective transformations in 3D graphics?

f) What are some of the challenges in implementing parallel projection in real-time app-lications?

g) How do algorithms for ellipse drawing differ from those for circle drawing?

h) What are some limitations of filling algorithms?

i) What advantages did CRT displays have over early flat panel displays?

j) How do DDA line drawing algorithm works?

SECTION-B

2. How do matrix operations represent 2D transformations, such as translation, rotation, scaling, and shearing? What are the resulting coordinates for the line segment with end points (3, 4) & (7, 5) rotated around the origin by 60 degrees counterclockwise?

3. What are some common circle-drawing algorithms and how do they work? Explain the concept of Mid-point.

4. How do CRT displays differ from modern flat panel displays? What is the difference between working of a LCD, LED and OLED flat panel display?

5. How do matrix operations represent 3D transformations, such as translation, rotation, scaling, and shearing? Illustrate. How do different 3D transformations differ from respective 2D transformations?

6. How do Cohen-Sutherland and Liang-Barsky clipping algorithms work, and what are their strengths and weaknesses? Given the line segment with endpoints (2, 5) and (12, 8), and the clipping region defined by the four inequalities x >= 3, x <= 9, y >= 2, and y <= 7, apply the Liang-Barsky algorithm to clip the line segment.

7. How do different input devices affect user interaction with computer systems? Discuss different types of modern day input devices.

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