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Total No. of Questions : 09

M.Sc. (IT) (Sem.–3)
COMPUTER GRAPHICS
Subject Code : PGCA-1919
M. Code : 93338
Date of Examination : 12-01-23

Time : 3 Hrs. Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION - B & C. have FOUR questions each.**
3. **Attempt any FIVE questions from SECTION B & C carrying TEN marks each.**
4. **Select atleast TWO questions from SECTION - B & C.**

SECTION-A

1. **Write short notes on :**

   a. Scan Conversion

   b. CMY Color Model

   c. Applications of Computer Graphics in Medical Science

   d. Need of Homogonous Matrix for Transformations

   e. Demerits of DDA Algorithm

   f. Types of Text Clipping

   g. Need of Shading in 3D Modelling

   h. Depth Sorting of Surfaces

   i. Parallel *vs.* Perspective Transformation

   j. Usage of Viewport in two dimensional viewing.

SECTION-B

2. Illustrate the working of different types of Raster Scan Display Systems with suitable diagram. Explain the need of dedicated processor for graphics related operation.

3. What are the various steps for drawing a circle using Mid-Point Circle Algorithm? What is the meaning of Mid-Point in this algorithm? Calculate coordinate points for a circle having center at (20, 35) and radius 10, using this algorithm.

4. What can be the application of composite transformations in computer graphics? Write down step by step process to rotate a triangle having coordinates (4, 2), (8, 2) and (5, 7) around a fixed point (1, 2) on an angle of 60 degree in anti-clock wise direction.

5. What are the various applications of computer graphics? Illustrate.

SECTION-C

6. How an object will transform from real life 3D space to 2D screen? Discuss the process. What are the various types of Perspective transformation? Explain.

7. How clipping helps in better viewing of a scene? What are the various types of clipping? Write down various steps of Liang-Barsky clipping algorithm. Illustrate with suitable diagrams and examples.

8. What are the various techniques for visible-surface detection? Discuss Painter's Algorithm in detail.

9. Write short note on:

   a. Shading Models for Polygons

   b. Gouraud Shading.

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.