B.Tech. Degree VI Semester (Supplementary) Examination in Computer Science and Engineering December 2002

CS 602 COMPUTER GRAPHICS
(1995 Admissions)

Time: 3 Hours   Maximum Marks: 100

I.   (a)   Explain the architecture of a raster-graphics system with a display processor. Bring out
            the importance of display processor.   (13)
     (b)   What is frame buffer? Explain how pixel screen positions are stored within the fame
            buffer.   (12)
                                              OR
II. (a)   Briefly discuss various graphical input devices.   (13)
     (b)   With a block diagram explain the working of random-scan systems.   (12)

III. (a)   What are homogeneous coordinates? Explain their use in computer graphics.   (5)
     (b)   Given a quadrilateral ABCD with A (10, 8), B (22, 8), C (34, 17) and D (10, 27).
            Move ABCD by 10 length units to the right and 5 length units downwards.   (15)
     (c)   Explain how zoom transformation is represented?   (5)
                                              OR
IV. (a)   Explain Cohen-Sutherland clipping method.   (10)
     (b)   Given Window parameters (left, right, bottom, top) as (5, 30, 15, 25) and a quadrilateral
            ABCD with corner coordinates (10, 18), (22, 18), (34, 27) and (10, 37). Find out the
            coordinates of clipped polygon using Cohen-Sutherland method.   (15)

V.   (a)   Discuss Painters Algorithm.   (12½)
     (b)   Find a three-dimensional matrix to represent a rotation about the x-axis followed
            by a rotation about the y-axis. Does the order of performing the rotation matter?   (12½)
                                              OR
VI. (a)   Explain how wire frame models are represented. What are the disadvantages of such
            a representation?   (12½)
     (b)   Discuss mathematical representation of perspective projection. What are vanishing
            points?   (12½)

VII. (a)   Discuss methods for structuring and storing graphics information.   (12½)
     (b)   Discuss graphics manipulation primitives supported by general graphics application
            packages.   (12½)
                                              OR
VIII.(a)   Bring out the importance of device independent graphic systems.   (12½)
     (b)   Discuss any graphics application package.   (12½)

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