Roll No ....

MCIT-104

M.E./M.Tech., I Semester Examination, June 2020
Computer Graphics and Multimedia

Time : Three Hours

Maximum Marks : 70

Note: i)   Attempt any five questions.

    ii) All questions carry equal marks.

1. a)   Explain cyrus beck algorithm for line clipping with relevant example.
   b)   Explain Bresenham's algorithm for circle generation about origin. Draw the point on circle of radius 6 about origin with this algorithm.

2. a)   Discuss briefly the working of two input devices -
   Mouse and Joystick.
   b)   Differentiate between:
       i)   Raster scan system Vs Random scan system
       ii) Beam Penetration CRT Vs Shadow mask CRT

3. a)   Explain about any one polygon filling algorithm. Explain in advantages and disadvantages.
   b)   Derive the matrix form for the following basic geometric transformation in 3-D graphics:
       i)   Rotation
       ii) Mirror reflection

4. a)   Explain the working of Sutherland Hodgeman algorithm for polygon clipping? Suggest one example to elaborate your algorithm.
   b)   Show that the Bezier curve always touches the starting point (for $u = 0$) and the ending point (for $u = 1$).

5. a)   Use a quadratic B-spline curve with five control points to prove that B-spline blending functions sums to unity.
   b)   Define the following.
       i)   Roy tracing
       ii) Rendering
       iii) Visualization

6. a)   Compare and contrast parallel and perspective projections.
   b)   Derive the transformation matrix to mirror reflect any object about any line $y = mx + c$.

7. a)   Distinguish between object space and image space methods of visible surface detection algorithms. Give two examples of each.
   b)   Discuss briefly the component of multimedia system.

8. a)   Give a brief note on storage technologies.
   b)   Write short notes:
       i)   Hyper media messaging
       ii) Distributed multimedia system

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