Roll No .....

MCIT - 104

M.E/M.Tech., I Semester

Examination, December 2015

Computer Graphics And Multimedia

Time : Three Hours

Maximum Marks : 70

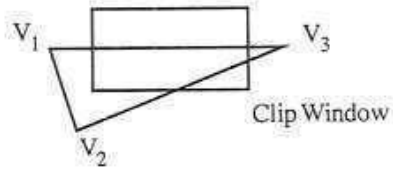
Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) What are the number of memory bits required for 8-bit plane frame buffer for a 512 × 512 raster? Also calculate the refresh rate for the same raster (512 × 512), if pixels are accessed at the rate of 250 nano seconds.

   b) Explain briefly the impact of persistence of phosphor on graphics animation.

2. a) Explain the working of Cohen and Hodgman polygon clipping algorithm for the following polygon.



   b) Find the intermediate points between A(5,6) and B(10,10) of a line using Bresenham's line drawing algorithm.

3. a) Derive the 3D transformation matrix for rotation about an arbitrary axis.

   b) Find the transformation matrix to reflect the triangle A (0,0) B(4,0) and C(4,4) about the line $y = 2x + 5$.

4. a) Derive the transformation matrix for two dimensional transformation about any arbitrary point.

   b) Explain shearing transformation with example.

5. a) Distinguish between parallel and perspective projections.

   b) Why is Visual surface detection important in graphics? How are the detection techniques classified?

6. a) Define blending function. Explain how this function is used in Bezier curves. Also give the procedure for constructing Bezier curves.

   b) Explain Ray tracing.

7. a) Explain the concept of dithering in image synthesis.

   b) Discuss the characteristics of MDBMS.

8. a) Distinguish between Lossy compression and Lossless compression.

   b) Explain multimedia authoring tools briefly.

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