

Seventh semester examination-2006 Computer Graphics & Multimedia

Full marks-70

Time-3hrs

Answer Question No.1 which is compulsory and any five from the rest.

The figure in the right side margin indicates the mark.

1. Answer the following question : [2x10]
 - (i) Enumerate the steps in parallel curve algorithms.
 - (ii) What is a homogeneous co-ordinate ?
 - (iii) Differentiate between resolution and aspect ratio .
 - (iv) Find the reflection of the point P (23,36) about the line $X=-12$.
 - (v) Differentiate between viewing transformation and composite transformation .
 - (vi) Why midpoint circle drawing algorithm is called so?
 - (vii) A raster system has a resolution of 640-by-480. How many pixels could be accessed per second in this system by a display controller that refreshes the screen at 60Hz?
 - (viii) How interior regions are found with winding number rule ?
 - (ix) Briefly describe the steps involved in Cohen-Sutherland line clipping algorithm .
 - (x) A RGB raster has a 512-by-1024 frame buffer with 24 bit per pixel . State number of distinct color choice possible and number of distinct color visible at any instant of time
2. what are raster scan and random scan display ? Explain the working of raster scan display with necessary diagrams.
3.
 - (i) Describe Bresenham's line drawing algorithm .
 - (ii) Explain how the algorithm works for drawing a line between (20,10) and (26,18).
4.
 - (i) Describe about 2D transformation operations like translation , rotation, scaling and reflection with proper examples.
 - (ii) Derive the transformation matrix for rotating an arbitrary point another arbitrary point through an arbitrary angle .
5.
 - (i) what is perspective projection ? Derive the transformation for general parallel and perspective projection . [5]
 - (ii) Describe Nicholl-Lee-Nicholl line clipping algorithm . [5]

6. what are different visualization techniques for achieving realism . [10]
7. Distinguish between image and object space visible surface detection methods.Explain Z- Buffer , Area Subdivision and Painter's algorithm for identifying visible surface . [10]
8. write short notes on the following (any four)]
2.5x4]
 - a) Anti aliasing
 - b) Back face detection
 - c) Frame buffer
 - d) Half toning
 - e) Winding number rule .

