

END-TERM EXAMINATION

DECEMBER-2006

Paper Code: BIS305

Subject: Computer Graphics

Maximum Marks : 75

Time : 3 Hours

Note: Attempt any six questions. Q.1 is compulsory.

(2.5x10=25)

Q.1 Describe the following in brief: -

- (a) Raster Scan Display System
- (b) SRGP
- (c) Addressability and Resolution
- (d) Data Tablet
- (e) Perspective Projections
- (f) Binary Space-Partition Trees
- (g) Atmospheric Attenuation
- (h) Rendering
- (i) Octrees
- (j) Thermal Transfer Printers

Q.2 (a) What do you understand by Scan-Converting a line? Describe the basic incremental algorithm for drawing a line. (5)
(b) Why do you need clipping? Discuss ONE line clipping algorithm in detail. (5)

Q.3 (a) Explain the structure and functioning of the Raster Display System with Integrated Display Processor. What is its advantage over a peripheral Display Processor? (6)
(b) What is the need for Homogeneous Coordinates? Explain with examples. (4)

Q.4 (a) Suppose that the base of the window is rotated at an angle θ from the x-axis. What is the Window-to-Viewport mapping? Verify your answer by applying the transformation to each corner of the window, to see that these corners are transformed to the appropriate corners of the viewport. (5)
(b) What is meant by Projection? How does it solve the problem of mismatch between 3d objects and 2d displays? (4)

Q.5 (a) Define Parametric Bicubic Surfaces. Discuss Hermite Surfaces in detail. (6)
(b) Define Quadric Surfaces. Explain their uses in Computer Graphics. (4)

Q.6 (a) What do you understand by Boundary Representations? Discuss Winged-edge Representation method in detail. Also give its advantages. (5)
(b) Define Specular Reflection. How do you overcome the problems associated with Specular Reflection (5)

Q.7 (a) Describe Interpolated Shading. Write down all the problems related to different Interpolated Shading models you have studied. (6)
(b) Describe Procedural models and their applications. (4)

Q.8 (a) Describe the advantages of Computer Based Animation over the Conventional Methods of animation. (5)
(b) How many types of animation languages you know? Describe briefly each type of language with examples. (5)