2014

(Fourth Semester)

MASTER OF COMPUTER APPLICATIONS

Paper No: MCA 403

(Computer Graphics & Multimedia)

Full Marks : 60

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer Question No 1 and **any four** from the rest

1. **Answer the following questions briefly:** **2X6 = 12**

a) What do you understand by Aspect Ratio?

b) Define Surface Rendering?

c) What are Bezier Surfaces?

d) Describe the 2D transformation matrix for rotation about arbitrary points.

e) Differentiate between diffuse reflection and specular reflection?

f) Explain the rotational transformation for a three dimensional object.

2. a) Explain the two basic techniques for producing color displays with a CRT monitor. **6**

b) Write complete routines for filling a polygon using scan-line algorithm. 6

3. a) What is a frame buffer? Explain its operation in details for an N-bit gray level frame buffer with W-bit wide lookup table. 6

b) Write and explain Bresenham's Line Drawing Algorithm. 6

4. a) What are the basic methods for three dimensional transformation. Explain in detail. 6

b) Explain various input modes in Computer Graphics. 6

5. a) Write the properties of Bezier Curves.Plot the four Blending functions for cubic Bezier curves. 6

b) Differentiate between Hermite Splines and Cardinal Splines. Also write the properties of a B spline curve. 6

6. a) Define segment. Write an algorithm for deleting a segment. 6

b) Explain briefly two Basic Illumination Models. 6

7. a) What do you know about Event Handling? Explain with appropriate diagrams. 6

b) Write a routine for enabling and disabling an input device class. 6

8. a) Explain briefly how objects are projected in a 3 dimensional space using perspective projection. 6

b) Explain the Hermite Interpolation.Derive its blending functions and plot the four blending functions. 6

**********IV/MCA/403**********