

C 18262

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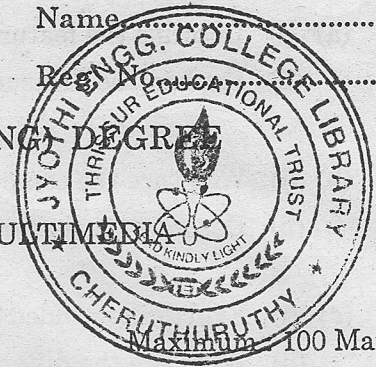
Name

Reg. No.

SIXTH SEMESTER B.TECH. (ENGINEERING DEGREE)
EXAMINATION, JUNE 2011

CS 04 606—COMPUTER GRAPHICS AND MULTIMEDIA

(2004 admissions)



Time : Three Hours

Answer all questions.

- I. (a) Write the pseudo code for generating circle points using eight-way symmetry and explain.
(b) What are area defining primitives ? What are its types ? Explain using examples.
(c) Define the following :—
(i) Centre of projection.
(ii) Direction of projection.
(iii) Vanishing point.
(d) Discuss the issues related to selection interaction task with fixed size choice set.
(e) Define frequency and amplitude of sound. Explain how sound is represented.
(f) Explain the features of various colour encoding techniques.
(g) Explain the importance of differential encoding in Multimedia system.
(h) List the layers that comprise the video data stream in MPEG and explain the function of each layer.

(8 × 5 = 40 marks)

- II. (a) (i) Write the basic incremental algorithm for scan converting a line. What are its limitations ?

(8 marks)

- (ii) Derive the transformation matrix for scaling an object about an arbitrary point.

(7 marks)

Or

- (b) Find the transformation matrix for the following sequence of transformation applied to a triangle whose end points are (0, 2), (2, 5) and (5, 0).

Scale the triangle three times and rotate about in point (3, 4) by an angle 45.

- III. (a) Classify perspective and parallel projectives. Explain by considering a cube as an object to be projected.

Or

- (b) (i) Discuss the design issues of 3D interaction tasks. (9 marks)

- (ii) Explain the different ways of representing polyhedral objects. (6 marks)

Turn over

- IV. (a) (i) Describe the features of High Definition systems. (8 marks)
(ii) Explain the measures that are used in visual representation. (7 marks)

Or

- (b) (i) What are the components of MIDI synthesizer ? Explain their usage in detail. (7 marks)
(ii) Describe the features of various standards employed in conventional TV systems. (8 marks)

- V. (a) (i) Explain how video encoding is done in MPEG. (9 marks)
(ii) What are the different ways of storing multimedia data ? Explain. (6 marks)

Or

- (b) (i) Describe the characteristics of Multimedia Database Management system. (8 marks)
(ii) Explain the usage of H261 in Data Compression. (7 marks)

[4 × 15 = 60 marks]