Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

T 3187

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2008.

Sixth Semester

(Regulation 2004)

Computer Science and Engineering

CS 1354 — GRAPHICS AND MULTIMEDIA

(Common to B.E. (Part-Time) Fifth Semester Regulation – 2005)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   What is 'Scan Conversion'?

2.   How do you correct the shape of line ends for very thick and inclined lines?

3.   How are fractals classified?

4.   What does Y, I, Q represent in YIQ color model?

5.   Name a few analog and digital video broadcast standards.

6.   What kind of database management systems are preferred for multimedia data?

7.   Calculate the file size in MB for a 1 minute stereo recording of CD quality music at 44.1 KHz sampling rate and 16 bit resolution.

8.   What do you understand by refresh rates of a monitor and how do you measure it?

9.   What are common navigation modes?

10. Compare the performances of High speed LAN's for multimedia data transfer.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Derive Bresenham's algorithm for lines with slope magnitudes>1. (8)

   (ii) Use the above algorithm to find all the points on a triangle in the first quadrant with vertices at (0, 2), (6, 2), (3, 6). (8)

Or

(b) (i) Find the reflection of the point (2, 4) with respect to the line $y = x + 1$. (8)

   (ii) Apply Cohen Sutherland line clipping algorithm to clip a line with end points (1, 7) and (7, 5) against a window with boundaries $xw_{min} = 2$, $xw_{max} = 6$, $yw_{min} = 2$, $xw_{max} = 6$. (8)

12. (a) (i) Discuss the characteristics of Bezier curves and Bezier surfaces in detail. (12)

   (ii) Write a short note on B-Spline curves. (4)

Or

(b) (i) Depict and discuss the HSV color model in detail. (8)

   (ii) How do you implement morphing animation technique? Discuss with an example. (8)

13. (a) (i) Explain the multimedia systems architecture in detail. (8)

   (ii) What are the basic objects of multimedia? (8)

Or

(b) Write a detailed note on the predominant areas of multimedia applications. (16)

14. (a) (i) Discuss the CCITT group of compression standards in detail. (8)

   (ii) Explain the TIFF file format. (8)

Or

(b) (i) Describe the operation of a pen Input system. (8)

   (ii) Draw the video capture board architecture and write a short note on the functions of each component. (8)

15. (a) Discuss the types of multimedia authoring systems. (16)

Or

(b) (i) What are the components of a typical hypermedia message? (8)

(ii) What is hypermedia linking and embedding? Explain. (8)

———————————