

**Z 3514**

M.C.A. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2006.

Third Semester

MC 1704 — COMPUTER GRAPHICS AND MULTIMEDIA SYSTEMS

(Regulation 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define resolution.
2. What are the functions of video controller?
3. Show that the composition of 2 translation is additive by concatenating the matrix operations for  $T(x_1, y_1)$  &  $T(x_2, y_2)$  to obtain  $T(x_1+x_2, y_1+y_2)$
4. How virtual scenes are generated?
5. Define depth cueing.
6. Define Morphing.
7. What is MIDI? How audio files are converted to MIDI?
8. List the challenges in Multimedia.
9. What is meant by video on demand?
10. Define synchronization.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Write short notes on raster scan display systems. (6)
- (ii) Describe any five input devices. (10)

Or

- (b) (i) Discuss Bresenham's line drawing algorithm with an example. (6)
- (ii) Describe Cohen Sutherland line clipping algorithm with example. (10)

12. (a) Describe the usage of Bezier curves. (16)

Or

(b) Consider an image in the first quadrant. The reflection of the image is in II quadrant and in the III quadrant the image is 3 times enlarged than the original image and in the IV quadrant the image is made to rotate continuously with some time delay. Write various transformation that are needed to perform the above operations. (16)

13. (a) Discuss any four algorithm for visible surface detection. (16)

Or

(b) Describe any four coloring models used in graphics. (16)

14. (a) Discuss the tools used for developing characters of various fonts styles and sizes. (16)

Or

(b) Explain how animation can be incorporated in Multimedia applications. (16)

15. (a) How are multimedia system connected with database system and how data storage and retrieval are done? (16)

Or

(b) Write short notes on :

(i) Video conferencing (8)

(ii) Virtual reality. (8)