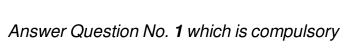
Total number of printed pages – 4 MCA PCS 3007

Fourth Semester Examination – 2008

COMPUTER GRAPHICS

Full Marks - 70

Time: 3 Hours



Figures in the right hand margin indicate marks.

and any five from the rest.

- 1. Answer the following questions: 2 × 10
 - (a) What is the difference between rasterization and scan conversion?
 - (b) Write the use of error term in Bresenhams line drawing algorithm.
 - (c) What are the disadvantages of seed fill algorithms?





P.T.O.

- (d) Differentiate between parallel and perspective projections.
- (e) Write down the role of scan conversion in seed fill algorithms.
- (f) Justify the use of special purpose of graphics processors.
- (g) Differentiate between windows and viewports.
- (h) What do you understand by the resolution of the CRT?
- (i) How does the refreshing rate affects the interlace and non-interlace displays?
- (j) List down the advantages of user interface over command-line interface.
- (a) Explain the storage tube graphics display mechanism with its advantages and disadvantages.
 - (b) What is the frame buffer ? How can the intensity levels of pixels be increased using look-up table ? Illustrate your answer taking an n-bit plane with a w-bit wide look-up table.
 3+3

PCS 3007 2 Contd.

3.	(a)	Discuss the Bresenham's integer	line
		generation algorithm.	5

- (b) Explain how it works on the points (5,5) to (10,7)?
- 4. (a) What is clipping? Explain Cohen-Sutherland clipping algorithm with an example. 5
 - (b) Given a window A(20,20), B(60,40), C(60,40), D(20,40). Use Cohen Sutherland algorithm to find the visible portion of the line P(40,80) Q(120,30) inside the window?
- 5. (a) What are the ground rules for graphics software design? What are the common graphic primitives, windowing functions and utility functions in a graphics package?

(b) Develop the formulae to compute the address of raster in frame buffer displays.

5

(i) about the origin

DΤΩ

(ii) about P(-1,-1)

- (b) Magnify the triangle with vertices A(0,0),B(1,1), C(5,2) to twice its size while keeping C(5,2) fixed.
- 7. (a) What are Gourad and Phong Shading?
 - (b) Explain Warnocks algorithm for hidden surface removal.
- 8. (a) Write some important properties for designing curves?
 - (b) What is Bezier curve? State some important properties of Bezier Curve. 3
 - (c) Write the Bezier equation and draw the Bezier curve using a set of control points (1,5), (2,2), (5,2), (7,5) and (9,2). Test the order of continuity by the above curve. 4

PCS 3007 3 P.T.O. PCS 3007 4 – C