2016

M.Sc. 1st Semester Examination

COMPUTER SCIENCE

PAPER—COS-106

(Practical)

Full Marks : 50

Time : 2 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

(Computer Graphics Lab.)

Answer any *one* question.

[Marks : 25]

1. Write a program to draw any polygon using Bresenham's line drawing algorithm.

2. Write a program to draw two concentric circle using any standard algorithm.

3. Write a program to implement Bresenham's circle generation algorithm.

4. Show that a 2D reflection through X-axis followed by a 2D reflection through the line Y = –X is equivalent to pure rotation (rotation about origin by an angle of 270°).

5. With the help of a program implement X-direction and Y-direction shear.

6. A triangle is defined by

$$\begin{bmatrix} 20 & 40 & 40 \\ 20 & 20 & 40 \end{bmatrix}$$

Write a program to perform the following transformation sequentially

(i) 90° rotation about origin

(ii) reflection about line y = –x.

7. Display the final transformation matrix of the following transformation of a triangle

$$\begin{bmatrix} 50 & 100 & 100 \\ 50 & 50 & 100 \end{bmatrix}$$

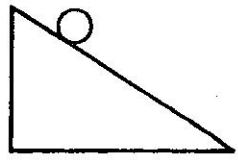
- scaling by a factor of 2 in the x-direction and then
- rotation about (50, 50) in an angle of 90°.

8. Write a program to implement mid-point ellipse generation algorithm.

9. Write a program to print the first letter of your name using any standard line drawing algorithm.

10. Write a menu driven program to show all standards of 2D reflection.

11. Write a program to draw the below figure using any standard algorithm



12. Write a program to show that "a pair of parallel straight line remain parallel even after transformation".

PNB : 10 marks

Viva : 15 marks

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