## 2020

## COMPUTER SCIENCE - GENERAL

## Paper: DSE-A-3

(Computer Graphics)

## Full Marks : 50

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

## Day 2

Answer question no. 1 and any four from the rest.

1. Answer any five questions :
(a) Define raster scan and vector scan.
(b) What do you understand by point clipping?
(c) Define pixel.
(d) Mention the importance of resolution in computer graphics.
(e) Write 3-dimensional rotation matrix (about x-axis).
(f) Define world coordinate.
(g) State the importance of homogeneous coordinate system.
(h) Write 2 -dimension scaling matrix (about x -axis and about y -axis).
2. (a) Discuss Cohen-Sutherland line clipping algorithm.
(b) Discuss Sutherland-Hudgeman polygon clipping algorithm.
3. (a) Find the transformation matrix for the following transformation :

Reflection of an object about the line $y=-x$.
(b) Prove that two consequtive translation is commutative.
4. (a) Derive and discuss midpoint line drawing algorithm.
(b) Derive and discuss Digital Differential Analyzer.
5. (a) Derive and discuss eight-point circle drawing algorithm.
(b) Derive and discuss midpoint circle drawing algorithm. $5+5$

## T(5th Sm.)-Computer Science-G/DSE-A-3/CBCS/Day-2 (2)

6. (a) Discuss the working principle of CRT monitor.
(b) Discuss the steps of animation in computer graphics.
7. (a) Differentiate parallel projection and perspective projective.
(b) Discuss about the classification of morphing. 5+5
8. (a) Derive and discuss Bresenham's line drawing algorithm.
(b) Derive and discuss Bresenham's circle drawing algorithm. 5+5
