

Roll No.:
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1. Indicate which raster locations would be chosen by Bresenham's algorithm when scan-converting a line from pixel coordinate (1,1) to pixel coordinate (8,5). 8
2. Write an algorithm for drawing an upper half portion of a circle ranging from 180 degree to 0 degree only by using Bresenham's Circle Drawing Method. Assume that center of the circle is (0,0) and radius is 10 but you must need to shift the center at center (cx, cy). 9
3. Consider a geometric object which has multiple boundary colors. We want to fill this object by one color. In this case, which of the region filling algorithm(s) is/are best? 3

**Heaven's Light is Our Guide**  
**Department of CSE, Rajshahi University of Engineering & Technology**  
**Course No. - CSE 4201 (Computer Graphics & Animations)**  
**CT - 4, Marks: 20, Time: 20 Mins.**

Roll No. —

Q1.	Suppose the world coordinates and the normalised device coordinates are given and we want to map the window to the viewport. Now, find the normalisation matrix which gives the translation-scaling-translation transformation.	7
Q2.	Consider the Cohen Sutherland algorithm which is used for line clipping widely. a) Is it possible to have consecutive ones in the region code of the end points of a line? b) Find a mathematical equation for finding the intersection point of a clipping candidate if the 3rd bit of the region code is 1.	4+6
Q3.	Prepare a question which contains 5 marks covering the topics of class test 4 but not matching the above question no. 1 & 2. Based on the depth of the question you will get the marks for this question.	3