**IT441 COMPUTER GRAPHICS**

QUIZ #1

MAX MARKS: 4 x 3 = 12 TIME ALLOWED: 40 MINUTES

Q1. From the origin (0,0) to endpoint (10,M), a line is to be drawn using the mid-point line drawing algorithm. Determine the pixel which will be selected by the algorithm in the column given by coordinate x = 2.

How to provide answer: Y coordinate value of pixel.

Q2. A line segment extends between world coordinates (-1,0) and (19,20). A clip rectangle is specified by bottom left point (0,0) to top right point (15,M), in world coordinates. Determine the end-points of the clipped line segment.

How to provide answer: Coordinates of the two points, (a,b) and (c,d).

Q3. A 2D object is located with its centroid at point (M, 2\*M). Calculate the homogenized transformation matrix which will rotate this object ABOUT ITS CENTROID by angle q degrees, where sin(q) = 0.6, cos(q) = 0.8.

How to provide answer: [ a11, a12, a13 ; a21, a22, a23 ; a31, a32, a33 ].

Q4. A 2D object is located with its centroid at point (M, 2\*M). Calculate the homogenized transformation matrix which will scale this object ABOUT ITS CENTROID by scale factors Sx = 0.4 and Sy = 0.6.

How to provide answer: [ a11, a12, a13 ; a21, a22, a23 ; a31, a32, a33 ].