**JIS College of Engineering**

**B. Tech (Information Technology)-5th Semester**

Computer Graphics Assignment

Paper Code: **IT-505C**  Assignment ID: **Soham/OSem/2015/IT505C/0006**

*Computer Graphics is no separate from Mathematics!*

I am: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Roll: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

My Full Signature:

1. Express transformation matrices for reflection of a point about any straight line **y=mx+c**

**whereθ=tan-1 (m)**

1. A mirror is placed on X-Y plane such that it passes through the points (**2,0**) and (**0,2**). What will be the vertices of ΔABC after reflection?

ΔABC ≡

*[Check and Tally: Answer should be (-2, -1), (-3, -3), (-5, -2)]*

1. Following transformations are applied to ΔABC in sequence:
   1. Reflection about the **X-axis**

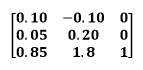
ΔABC ≡

* 1. Reflection about the straight line **y=-x**
  2. Rotation about the origin by **270°**

Find an equivalent single Transformation matrix combining the above 3 transformations. Finally, what do you conclude?

*[Check and Tally: “I will not tell you beforehand!”]*

**ABCD** ≡

1. Perform viewport transformation of the rectangle ABCD to a viewport whose lower left is at the point A and is the entire *normalized* screen.

*[Check and Tally:* *]*