BRAC UNIVERSITY

Department of Computer Science and Engineering

Quiz 03   Semester: Fall 2024

Duration: 35 minutes   Full Marks: 20

CSE 423: Computer Graphics

Name:	ID:	Section:

Answer **all** the following questions.
Figures in the right margin indicate marks.

1.	i) Suppose a light intensity has the value 0.653. If it is achromatic, what are the RGB values? **[2]** ii) Define a subtractive color model. **[2]** In a color model, you are given a Hue of 210º, Saturation, and Value of 0.75 and 0.6, respectively. Convert this to a subtractive color model and, at last, scale it. **[6]**
2.	A point (20,30) needs to be reflected about the line, $y = \frac{1}{\sqrt{3}}x - 1$ (i) Why do we reflect a point about the x-axis when trying to reflect it about a line? **[1]** (ii) Write/State the homogenous matrices for this composite transformation. **(You do not need to do the multiplication part) [2]** Which properties are preserved in shearing and rotation? **[2]** A point has been transformed to (30,8) by first scaling it about a point (5,5) by 3 on both axes, translating it by (7,7), and lastly rotating it clockwise 90º about a point (-3,-4). Write/State the inverse composite matrices to find the original point. **(You do not need to do the multiplication part) [5]**