



Daffodil International University
Department of Computer Science and Engineering

Faculty of Science & Information Technology

Final Examination, Fall 2020 @ DIU Blended Learning Center

Course Code: CSE421, Course Title: Computer Graphics

Section: PC-A

Teacher: MIJ

Modality: Open Book Exam

Date: Tuesday 22 December, 2020 Time: 02:00 pm - 06:00 pm

Four Hours (4:00) to support online open/case study based assessment Full Marks: 40

Directions:

- **Students need to go through the CASE STUDY shown in this exam paper.**
 - **Analyze and answer specific section based on your own thinking and work.**
 - **Do not share as this will be treated as plagiarism by Blended Learning Center.**
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Answer the following Questions

1. (a) State and explain the scaling, rotation and translation in 3D Transformation using matrix representation. 5
 - (b) Determine the matrix that represents the 2D rotation transformation by 30° about the origin of a triangle whose vertices are A(1, 1), B(2,2) and C(5, 2). 5
2. (a) Sketch the viewing transformation process with appropriate diagrams. Why it is necessary? 5
 - (b) Explain the Sutherland-Hodgman polygon clipping algorithm with figures. 5
3. (a) How projections are helpful in computer graphics? Also identify the differences between different types of projection. 5
 - (b) State the process of depth cueing and surface rendering. Are surface rendering uses in computer graphics? Explain. 5
4. (a) “Halftoning and patterning improves the graphics quality” – justify. 5
 - (b) Explain the color models in graphics and identify their importance and uses. 5