

Mid-West University
Examinations Management Office
Semester End Examinations 2081

Bachelor level/ B.E. Computer/ 5th Semester

Time: 3 hours

Subject: Computer Graphics (CO451/CO511)

Full Marks: 50

Pass Marks: 25

- *Attempt all the questions*
- *Figures in the margin indicate full marks.*
- *Assume suitable values, with a stipulation, if necessary.*
- *Candidates are required to answer the questions in their own words as far as possible.*

1. Describe the advancements in computer graphics from the 1990s to the present. [4]
2. a) What is a graphics tablet? Explain advanced resister graphic architecture. [4]
b) Differentiate between raster and vector display system with its architectures and diagrams. [4]
3. a) For a line segment from (3, 2) to (9, 7), calculate the pixel positions using Bresenham's Line Algorithm. [4]
b) Derive the rotation transformation matrix and explain how it is used in computer graphics. [4]
c) A triangle with vertices A(2,3), B(5,4), C(4,7) is first scaled by ($S_x = 2$, $S_y = 3$) and then translated by ($T_x = -1$, $T_y = 2$). Finally rotated by 60° . Compute the final coordinates of the transformed triangle. [4]
4. a) Discuss the challenges of using machine-dependent graphical languages in modern applications. [4]
b) What is file format? Describe various file formats that are used in computer graphics. [4]
5. a) Explain the difference between parallel and perspective projections in 3D graphics with examples [4]
b) Explain the Z-buffer algorithm for hidden surface removal with an example. [4]
c) Explain in detail about the Gourand model. [4]
6. What are the key sections of a project report? Provide a sample structure by considering graphical Project. [6]

The End