COLLEGE OF BUSINESS, PEACE, LEADERSHIP, AND GOVERNANCE

NCSC 300: COMPUTER GRAPHICS

END OF SECOND SEMESTER EXAMINATIONS

APRIL 2023

LECTURER: MR TIMOTHY MAKAMBWA

TIME: 3 HOURS

INSTRUCTIONS

Answer all Questions in Section A and any TWO question from Section B
Total possible mark is 100

Start **each** question on a new page in your answer Booklet.

The marks allocated to **each** question are shown at the end of the section.

SECTION A [60 marks]

Answer all questions in this Section

QUESTION 1
    a. Define pixel and resolution.   [4]

    b. List any four areas of applications of Computer Graphics.   [8]

QUESTION 2
    a. Describe the planar geometric projection.   [2]

QUESTION 3
    a. List two polygon filling methods.   [2]

    b. State the concept of Vanishing point.   [4]

QUESTION 4
    a. Explain the matrix representation for 2D Scaling   [4]

QUESTION 5
    a. Define pixel and resolution.   [4]

QUESTION 6
    a. Descrfibe the Properties of 3-D Transformation:?   [8]

QUESTION 7
    a. Describe the Bresenham algorithm for line drawing.   [8]

QUESTION 8
    a. The three-dimensional objects are made using computer graphics. The technique used for two Dimensional displays of three-Dimensional objects is called projection.

         Describe any 2 types of projection are available in Computer Graphics.   [8]

QUESTION 9
    a. List out the merits and demerits of Plasma panel display   [4]

QUESTION 10
    a. List any 4 Types of Clipping   [4]

SECTION B [40 MARKS]
Answer any Two questions
QUESTION 11

i.   Explain the steps involved in Sutherland-Cohen Line Algorithm . Demonstrate
     with an example Discuss its merits and demerits   [12]

ii. Describe the application areas of Clipping?   [4]

iii. Explain the basic idea of Bezier curves. Give an example of a Bezier curves. Does
     the curve pass through any of the control points? What is the main benefit of a B-
     Spline curves over a hermite or bezier curve.   [4]

QUESTION 12

i.   With the aid of visuals, Explain in detail the functioning of a standard graphics
     system using the Graphics pipeline and how the 3D viewing is implemented?
     Explain the importance of the three major steps in the 3D viewing pipeline.   [14]

ii. Distinguish between Raster-Scan and Random-Scan.   [6]

QUESTION 13

i.   Describe in detail the with the aid of a diagram CRT displays highlighting how
     different colors can be formed.   [14]

ii. Explain the Raster Scan and Random Scan.   [6]

THE END