



“Investing in Africa’s Future”

COLLEGE OF BUSINESS PEACE, LEADERSHIP AND GOVERNANCE

NCSC 300: COMPUTER GRAHICS

END OF FIRST SEMESTER EXAMINATIONS

NOVEMBER 2022

LECTURER: MR KUNDAYI CHINYONGO

DURATION: 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 ONE

- a. Define pixel and resolution. [4]
- b. List any four areas of applications of Computer Graphics. [8]

QUESTION TWO

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

QUESTION THREE

- a. List two polygon filling methods. [2]
- b. State the concept of Vanishing point. [4]

QUESTION FOUR

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

QUESTION FIVE

- a. Define pixel and resolution. [4]

QUESTION SIX

- a. Describe the Properties of 3-D Transformation:? [8]

QUESTION SEVEN

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

QUESTION EIGHT

- 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 NINE

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

QUESTION TEN

- a. List any 4 Types of Clipping [4]

SECTION B [40 MARKS]

Answer any Two questions

QUESTION ELEVEN

- 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 TWELVE

- 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 THIRTEEN

- 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]

END OF PAPER