



COLLEGE OF BUSINESS, PEACE, LEADERSHIP AND GOVERNANCE

CSC 300 COMPUTER GRAHICS

END OF FIRST SEMESTER EXAMINATIONS

NOVEMBER/DECEMBER 2018

LECTURER: MR A.C MUZENDA

DURATION: 3 HOURS

INSTRUCTIONS

Answer all Questions in Section A and any three questions 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

Answer all questions in this Section

1. Explain the following terms as they are used in Computer graphics;
 - i. Bitmap. [2]
 - ii. Persistence [2]
 - iii. Addressability [2]
2. What is a dot size? [2]
3. Explain out the methods used for smoothly joining two line segments. [4]
4. Briefly describe the differences between gourand shading and flat shading.[6]
5. Define texture mapping and explain the most commonly used methods. [6]
6. Write brief notes about the following transformations.
 - i) Reflection [3]
 - ii) Shear [3]
7. List and explain the applications of Computer Graphics. [4]
8. List out the merits and demerits of Penetration techniques [6]

SECTION B (60 MARKS)

Answer any three questions

9. A rectangle ABCD with coordinates, A(0;0), B(0;1), C(1;1) and D(1;0) has been transformed. Find the resultant matrix;
 - a. Rotating the rectangle by 45° and translating by (2;0) [6]
 - b. Draw the resultant diagram for the problem above. [4]
 - c. Explain the steps involved in Bresenham algorithm for line drawing. Demonstrate with an example. Discuss its merits and demerits [8]
10. a. Draw the cross-sectional diagram of a CRT device. Identify the major components and discuss their roles. [10]
 - b. What are the hardware devices used for computer graphics? [4]
 - c. What is the difference between impact and non-impact printers? [6]

11. a. Explain about clipping operations using a relevant example. [8]
b. Explain what is aliasing? Discuss two antialiasing methods. [6]
c. Distinguish between convex and concave polygons. [6]
12. a. Consider a line from (5, 5) to (11, 12). Using the simple DDA algorithm, rasterize this line. [6]
b. Explain Bezier curves and surfaces. [6]
c. Write short notes on active and passive transformations? [4]
d. Explain about clipping operations [4]

THE END