



MASINDE MULIRO UNIVERSITY OF

SCIENCE AND TECHNOLOGY

(MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

MAIN EXAM

2021/2022 ACADEMIC YEAR

THIRD YEAR FIRST SEMESTER EXAMINATION

FOR THE DEGREE

OF

**BACHELOR OF SCIENCE IN COMPUTER SCIENCE AND BACHELOR OF SCIENCE
IN INFORMATION TECHNOLOGY**

COURSE CODE: BCS 320/BIT 322E

COURSE TITLE: COMPUTER GRAPHICS

DATE: Monday 25/04/2022

TIME: 8:00a.m-10:00a.m

INSTRUCTIONS TO CANDIDATES:

**SECTION A IS COMPULSORY. ANSWER ANY OTHER TWO QUESTIONS IN
SECTION B**

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

Paper Consists of 2 Printed Pages. Please Turn Over 

SECTION A [COMPULSORY] QUESTION ONE [30 MARKS]

QUESTION 1

- a) Explain the following output technologies in terms of how they form an image: 4 Marks
- LED
 - Plasma
 - CRT
 - LCD
- a) Describe the process of pre-processing and segmentation during the process of pattern recognition. 3 Marks
- b) Describe the major steps in the imaging process: 8 Marks
- c) Write a program that draws a straight line in any language that you are comfortable with and displays it on the screen. 6 Marks
- d) A newly recruited ICT officer is asked to draft specifications for his new laptop. The officer decides to specify a 4k video card. How much memory would the graphics card be able to draw for an 8-bit color depth? 4 Marks
- a) Describe the structure and process of pattern recognition using the following terms: 5 Marks
- Sensing (measurement);
 - Pre-processing and segmentation;
 - Feature extraction;
 - Classification;
 - Post-processing;

SECTION B

Choose any two questions in this section

QUESTION 2

- a) Why is it that an architect cannot use perspective views when making sketches of a house: 4 Marks
- b) Explain one application area of perspective viewing. 4 Marks
- c) Why is it necessary that complex objects such as spheres be approximated by simpler polyhedra or flat polygons. Illustrate using a drawing how this is implemented. 6 Marks
- d) Describe the following transformations with the aid of supporting diagrams. 6 Marks
- Scaling
 - Shear

QUESTION 3

- a) Explain the following terms as used in computer graphics: 5 Marks
- Rasterization
 - Rendering
 - Framebuffer