

**Mount Kenya**



**University**

**UNIVERSITY EXAMINATION 2017/2018**

**SCHOOL OF COMPUTING AND INFORMATICS  
DEPARTMENT OF INFORMATION TECHNOLOGY**

**BACHELOR OF BUSINESS INFORMATION TECHNOLOGY/INFORMATION  
TECHNOLOGY  
VIRTUAL VARSITY**

**UNIT CODE BIT4102**

**UNIT TITLE: COMPUTER GRAPHICS**

**DATE: AUGUST 2018**

**SPECIAL/ SUPP**

**TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS**

**QUESTION ONE (30 MARKS)**

a) Define the following terms

- a. Pixel
- b. Memory mapping
- c. Resolution
- d. Image file
- e. Graphics

(5 Marks)

b) Explain the term computer graphics and explain in 3 areas where its highly used

(8 Marks)

c) Using a well labelled diagrams differentiate between perspective projection and parallel projection.

(7 Marks)

d) Define the term clipping and explain any four clipping methods used in computer graphics

(4 Marks)

- e) Using Bresenhaus line drawing algorithm scan convert a line from point (10,10) to (20,18) (6 Marks)

**QUESTION TWO (20 MARKS)**

- a) Differentiate between the following types of monitors  
a. CRT and LCD  
b. LED and OLED (8 Marks)
- b) In 2D and 3D graphic design there is relationship between the number of polygons used to represent an object, the processing power and memory requirements and the realism and smoothness of the object or environment. Explain in detail the above relationship and in advance explain each of the three facets of the relationship. (12 Marks)

**QUESTION THREE (20 MARKS)**

- a) Using a well labeled diagram, explain how the CRT monitors functions. (10 Marks)
- b) Using examples, explain the importance of the following concepts as used in computer graphics and their importance in how an image is displayed on the monitor  
i) Color  
ii) Texture  
iii) Image size  
iv) Image type (10 Marks)

**QUESTION FOUR (20 MARKS)**

- a) Define the term markup languages, in addition explain any four types of markup language used in computer graphics. (10 Marks)
- b) Discuss the role of computer graphics in the growth of computer usage in the world, highlighting the areas where computer graphics is highly used. (10 Marks)

**QUESTION FIVE (20 MARKS)**

- a) Explain the term computer graphics and explain in 3 areas where it is highly used (5 Marks)
- b) List the steps of the midpoint circle drawing algorithm including all the formulae for calculating the decision parameters (10 Marks)

c) Explain how point clipping is different from line clipping.

(5 Marks)

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