NATIONAL OPEN UNIVERSITY OF NIGERIA
University Village, 91 Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja
FACULTY OF SCIENCES
Department of Computer Science
April 2019 Examination

COURSE CODE: CIT 371
COURSE TITLE: Computer Graphics And Animation
CREDIT: 3 Units
TIME ALLOWED: $2^{1}/_{2}$ Hours
INSTRUCTION: Answer Question ONE (1) and any other FOUR (4) Questions

Question #1
a. Define computer graphics (3 marks)
b. Name five areas where computer graphics is applied (5 marks)
c. What is a raster? (2 marks)
d. Identify the available types of raster devices with examples (4 marks)

e. Outline the forms of line generation (3 marks)

f. Enumerate three (3) basic representations of curve shapes (3 marks)

g. Enumerate four (4) Pixel Operations (2 marks)

(Total = 22 marks)

Question #2
a. Mention three tools that are needed in studying computer graphics? **(3 marks)**
b. Enumerate the basic components of an interactive graphics system **(3 marks)**
c. With appropriate examples, describe the types of input devices for computer graphics **(3 marks)**
d. List any three (3) display hardware **(3 marks)**
(Total = 12 marks)

Question #3
a. List the data structures for graphical representation **(3 marks)**
b. Briefly describe two of the data structures for graphical representation **(3 marks)**
c. The BSP trees (Binary Space Partitioning) can be viewed as a generalization of k-d trees. Describe the BSP trees giving its characteristics and organisation **(6 marks)**
(Total = 12 marks)

Question #4

a. Define the following terms: **(6 marks each)**

- Spectroradiometer
- The RGB Colour Cube

b. Green paper is green because it reflects green and absorbs other wavelengths. Explain the colour printing process and summarise the output colour under different combinations **(4 marks)**

c. Explain the colour conversion mechanism and show the appropriate formula **(2 marks)**

(Total = 12 marks)

Question #5

a. Enumerate the Basic Vector Algebra **(4 marks)**

b. write short note on four (4) basic vector algebra **(8 marks)**

(Total = 12 marks)

Question #6

a. Using short note explain the process of determining the viewing ray in camera space **(4 marks)**

b. Explain the term Ray casting, the basic ideas for it and highlight two of its goal **(5 marks)**

c. The mapping between the two spaces is defined parametrically in terms of the maximum and minimum coordinates, considering this write short note on: **(3 marks)**

(Total = 12 marks)