

**NATIONAL OPEN UNIVERSITY OF NIGERIA**

**University Village, Plot 91, Cadastral Zone, NnamdiAzikiwe Express Way, Jabi, Abuja**

**FACULTY OF SCIENCES**

JULY 2017 EXAMINATION

**Course Code: CIT 371**

**Course Unit: 3**

**Course Title: Introduction to Computer Graphics and Animation**

**Instruction: Answer Question One and Any Four Other Questions**

**Time allowed: 21/2**

1a. List and explain any three application areas of computer graphics. 9 marks

b. Write a short note on graphicssoftware 4 marks

c. Consider the two matrices A= $\left[\begin{matrix}4&3\\3&7\end{matrix}\right]$and B=$\left[\begin{matrix}5&7\\2&1\end{matrix}\right]$

Calculate the following

i. 2A ii.A+B iii.AB 9 marks

2a. Draw the diagrammatic representation of the following vector operations.

 i. Vector Addition ii. Vector Subtraction 6 marks

b. What are key frames? 3 marks

c. Define the term rendering. 3 marks

3a. What is a texture? 2 marks

b. Draw an illustrative diagram of a Cathode Ray Tube. 8 marks

c. Define Kinematics. 2 marks

4a. Enumerate two uses of transformations. 4 marks

b. Define the term translation 2 marks

c. Draw a well labeled diagram of the RGB Color Cube 6 marks

5a. What is a graphics rendering pipeline? 2 marks

b. Find the distance between the points whose coordinates are

1. (5,2) and (7,3)
2. (-3,1) and (5,2)
3. (1,1) and (2,0)
4. (-3,-1) and (-5,-2) 10 marks

6a. Add the vectors a = [u, v]T and b = [s, t]T

b. calculate the dot product of the vectors a = [3, 7, 12] and b = [ 2, 4, 10]

c. Write a short note on Anti-Aliasing