TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR DEGREE IN:
BACHELOR OF MATHEMATICS & COMPUTER SCIENCE
BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY
(BMCS 12J – Y3 S1 & BSIT 12J – Y3 S2)

EIT 4214: COMPUTER GRAPHICS

END OF SEMESTER EXAMINATION
SERIES: DECEMBER 2014
TIME: 2 HOURS

Instructions to Candidates:
You should have the following for this examination
- *Answer Booklet*

This paper consists of **FIVE** questions. Attempt question **ONE (Compulsory)** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **TWO** printed pages

Question One (Compulsory)

a) Define the tem computer graphics **(2 marks)**

b) Identify FOUR primitive vector objects **(4 marks)**

c) Distinguish between the RGB and the CMYK colour model clearly stating where each may be used. **(4 marks)**

d) Define the term raster image and identify THREE principle sources of a raster images. Mention TWO applications of raster graphics **(7 marks)**

e) Describe the THREE types of perspective projections. Illustrate your answer with diagrams. **(9 marks)**

f) List FOUR benefits of scalable vector graphics **(4 marks)**

Question Two

a) Explain the term Random scan display **(2 marks)**

b) Describe how raster scan display works **(6 marks)**

c) Define the term clipping as used in computer graphics. Identify FOUR clipping techniques. **(6 marks)**

d) Outline the procedure for clipping a line that crosses border of a triangle **(6 marks)**

Question Three

a) Describe FOUR 2D transformation techniques that do not change shape of objects. **(4 marks)**

b) Write the DDA line Algorithm. **(5 marks)**

c) List THREE factors that determine the resolution of CRT **(3 marks)**

d) List FOUR application of computer graphics in industry **(4 marks)**

e) Identify any FOUR Open GL primitives **(4 marks)**

Question Four

a) Outline FIVE key features of the Cathode Ray Tube **(5 marks)**

b) Define the term ras Tracing **(3 marks)**

c) Describe the components and operation of array tracing algorithm **(8 marks)**

d) List FOUR features of a plasma display **(4 marks)**

Question Five

a) Define the OpenGL state how OpenGL executes rendering. **(4 marks)**

b) Outline how transformation of 3D scene into 2D rendered image plane is achieved in OpenGL **(4 marks)**

c) Illustrate with code how the Bresenham like Algorithmworking **(12 marks)**