KENYA METHODIST UNIVERSITY

END OF 1ST TRIMESTER 2010 EXAMINATIONS

FACULTY   :   COMPUTING AND INFORMATICS
DEPARTMENT   :   COMPUTER INFORMATION SYSTEMS
UNIT CODE   :   CISY 402
UNIT TITLE   :   COMPUTER GRAPHICS
TIME   :   2 HOURS

Instructions:
- *Answer all questions in section A and any 2 in section B.*

SECTION A (30 MARKS)

Question 1

i)   Briefly describe the following terms;
   a)   Resolution
   b)   Output primitive
   c)   Color model   (6 mks)

ii)   Differentiate between raster scan systems and vector scan systems.   (4 mks)

iii)   Define clipping and list three types of clipping.   (4 mks)

iv)   Describe four classifications of input devices.   (4 mks)

v)   Describe any three color models.   (6 mks)

vi)   Describe any two considerations you would take into account when developing GUI.
        (2 mks)

vii)   Describe how rotation of an object is achieved.   (4 mks)

SECTION B (3O MARKS)

Question 2 (15 marks)

i)   What is the significance of the chromaticity diagram?   (3 mks)

ii)   a)   Describe Bresenham's algorithm for wide generation.   (6 mks)

        b)   With the above algorithm generate the (x,y) coordinates for drawing a wide having a centre (2,3) and radius 5.   (4 mks)

iii)   Give any two graphics applications   (2 mks)

Question 3 (15 marks)

i)   List the operating characteristics of the following display technologies;

a)   CRT

b)   LCD   (12 mks)

ii)   List three types of geometric transformations.   (3 mks)

Question 4 (15 marks)

i)   a)   Describe the Liang Barsky algorithm.   (5 mks)

b)   Determine the new endpoints for a line P0 (30, 20) and P1(280, 160) on a dipping window (70,60) and (230,150).   (5 mks)

ii)   Give the procedure for reflecting an object about an arbitrary line.   (5 mks)