MERU UNIVERSITY COLLEGE OF SCIENCE & TECHNOLOGY

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University Examinations 2010/2011

FIRST YEAR, SECOND SEMESTER EXAMINATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

BIT 2111: COMPUTER AIDED DESIGN

DATE: DECEMBER 2010   **TIME: 2 HOURS**

INSTRUCTIONS: *Attempt Question **One** in Section A and any other **Two** Questions from Section B*

SECTION A (COMPULSORY – 30 MARKS)

QUESTION ONE

(a) Explain three types of rendering provided by the AutoCAD Render tool.   (6 Marks)

(b) Explain the function of each of the following AutoCAD commands:

   (i)   HPBOUBLE   (1 Mark)

   (ii)   HPSPACE   (1 Mark)

   (iii)   HATCHEDIT   (1 Mark)

   (iv)   DONUT   (1 Mark)

   (v)   BOUNDARY   (1 Mark)

(c) Explain what Dimension Associativity is   (2 Marks)

(d) Explain the three types of associativity between geometric objects and dimensions provided by AutoCAD.   (6 Marks)

(e) Explain the four distinct elements of dimensions.   (8 Marks)

(f) Distinguish between a Cartesian coordinate system and a Polar coordinate system.

                                                                                       (3 Marks)

SECTION B (Attempt any TWO Questions from this Section)

QUESTION TWO – 20 MARKS)

(a) Distinguish between an associative hatch and a non-associative hatch.　　(2 Marks)

(b) Describe the following commands, with the help of diagrammatic examples:

   (i)   Offset　　　　　　　　　　　　　　　　　　　　　　　　(2 Marks)

   (ii)   Array　　　　　　　　　　　　　　　　　　　　　　　　(2 Marks)

   (iii)   Stretch　　　　　　　　　　　　　　　　　　　　　　　(2 Marks)

   (iv)   Chamfer　　　　　　　　　　　　　　　　　　　　　　(2 Marks)

   (v)   Explode　　　　　　　　　　　　　　　　　　　　　　(2 Marks)

(c) Discuss how Engineers have benefited from the introduction of computer aided design tools such as AutoCAD.　　(8 Marks)

QUESTION THREE – (20 MARKS)

(a) Outline the steps for creating a diameter dimension.　　(5 Marks)

(b) Explain the "Pick Points" and the "Select Objects" AutoCAD's two different methods of hatching an area.　　(2 Marks)

(c) Outline the steps to be followed in order to draw a polygon in AutoCAD using the command line.　　(4 Marks)

(d) Describe the two lighting color systems in AutoCAD.　　(4 Marks)

(e) Discuss the main challenges faced by your University in the use of automated tools such as AutoCAD.　　(5 Marks)

QUESTION FOUR – (20 MARKS)

(a) Distinguish between the two types of the Array command, rectangular and polar array commands　　(4 Marks)

(b) The following steps are used to draw a rectangle.

   1) Start a new AutoCAD drawing.

   2) Start the line command

   3) For the start point, enter 5, 4

   4) For the next point enter @0, 10

   5) For the next point enter @ 7,0

   6) For the next point enter @0,-10

   7) For the next point enter @-7,0

   Sketch the rectangle on paper.　　(6 Marks)

(c) Explain the function of each of the following Zoom commands:

   (i)   Zoom Dynamic:　　　　　　　　　　　　　　　　　　(2 Marks)

   (ii)   Zoom Scale:　　　　　　　　　　　　　　　　　　　　(2 Marks)

(iii)   Zoom Centre: (2 Marks)

(iv)   Zoom In: (2 Marks)

(v)   Zoom Extent: (2 Marks)

QUESTION FIVE – (20 MARKS)

(a) Explain what Layers are in AutoCAD and illustrate this diagrammatically. (5 Marks)

(b) (i) Explain the importance of Object Snap tools in AutoCAD.   (2 Marks)

    (ii) Explain five snap settings/snap tools.   (10 Marks)

(c) Discuss three features that you would propose should be added to the AutoCAD tool you have used.   (3 Marks)