THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering and Technology

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

DIPLOMA IN ARCHITECTURE

EBC 2307: COMPUTER AIDED DESIGN & DRAFTING I

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2011

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *A word processor*
- *Auto CAD*

This paper consists of **FIVE** questions in two sections **A** & **B**
Answer question **ONE (COMPULSORY)** and any other **TWO** questions.
Maximum marks for each part of a question are clearly shown
This paper consists of **FOUR** printed pages

*Create a folder in the Desktop and name it **DA 10A SEM11 2011**; save **ALL** your answers in **Word** and **AutoCAD** in this folder. Name your **Word** and **AutoCAD** file using your **FULL** names followed by your **Student Number**.*

SECTION A (COMPULSORY)

Question 1 (30 marks)

a) (i) State **THREE** advantages of using Computer Aided Design, in creating engineering drawings, over manual drafting (3 marks)

(ii) Describe the following Computer Aided Design main window components

- Menu bars
- Graphics area
- Command line (4½ marks)

(iii) State the **THREE** methods of accessing commands in a CAD window (4½ marks)

b) Briefly explain the use of co-ordinates systems in CAD (8 marks)

c) Using AutoCAD plot the boundary of a plot of land with the following information (10 marks)

BEARINGS				DISTANCES IN METRES
LEG	º	‘	“	
AB	37	36	44	12.000
BC	100	24	39	15.200
CD	125	17	40	17.300
DE	238	39	57	19.100
EF	180	00	00	25.000
FG	256	16	36	35.500
GH	294	21	39	44.400
HJ	37	03	34	35.434
JA	90	21	39	33.500

SECTION B (Answer any TWO questions from this section)

Question 2 (20 marks)

Figure 1 below shows a simply shaped object in isometric. Using Computer Aided Design Software draw, in First Angle projection, the following orthographic views. (20 marks)

a) The front elevation as seen in the direction of arrow **F**
b) The plan as seen in the direction of arrow **P**
c) The end elevation as seen in the direction of arrow **E**

Fig 1.

Question 3 (20 marks)

Figure 2 below shows a dimensioned elevation of a bracket. Using a CAD software reproduce the elevation showing all of the provided dimensions (20 marks)

Fig. 2

Question 4 (20 marks)

Using a CAD software draw a detailed concrete strip foundation. On it, and **annotate** the following.

i) 250mm deep x 600mm wide plain concrete strip foundation
ii) 200mm thick stone block wall
iii) 300mm deep hardcore fill
iv) 50mm thick blinding

v) 100mm thick plain concrete ground floor slab (20 marks)

Question 5 (20 marks)

a) Explain the **THREE** methods of entering distances in a CAD program
b) Explain the use of LAYERS in AutoCAD
c) Explain **THREE** methods of restricting the movement of the cursor in CAD (20 marks)