



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

(A Centre of Excellence)

Faculty of Engineering & Technology

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

**HIGHER DIPLOMA IN BUILDING & CIVIL ENGINEERING
(HDBC 11)**

EBC 3219: COMPUTER AIDED DESIGN II

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *A Desktop Computer or Laptop Computer installed with the following application software.*
- *A Word Processor*
- *AutoCAD*

Create a **FOLDER** in the desktop and name it **HDIP 2BC**. Save **ALL** your answers in word and **AUTOCAD** in this folder. Name your word and **AUTOCAD** files using your full names followed by your Student Number.

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

Question One (30 marks)

- a) Outline CAD steps which should be following when setting up a drawing. **(15 marks)**
- b) Briefly describe any **THREE** methods of restricting cursor movement in the AUTOCAD window **(7 ½ marks)**
- c) Explain the principle of using layers in CAD. **(7 ½ marks)**

Question Two (20 marks)

- a) The following information relates to a proposed residential house.
 - 250mm thick external load bearing stone block wall.
 - 750mm wide x 250mm deep plain concrete strip foundation
 - Depth of strip foundation; at least 750mm below the average ground level
 - Ceiling = 3000mm above the FFL

Using AutoCAD, draw a section through an external wall from the strip foundation up to and including the eaves (closed eaves).

- Include an external timber door in the section. **(20 marks)**

Question Three (20 marks)

Figure 3 shows an isometric drawing of a simply shaped block. Draw the front elevation of the block as seen in the direction of arrow P. **(20 marks)**

All dimensions are in (millimeters)

Question Four (20 marks)

- a) The centre line of a proposed road is to be marked using four pegs A, B, C, and D. The distances and bearings of AB, BC and CD are as shown in the table below.

LEG	BEARINGS			DISTANCE IN METRES
	°	'	"	
AB	03	45	09	150,000
BC	104	22	44	187,000
CD	43	07	39	163,000

Legs AB and BC and BC and CD are to be blended using curves of radii 41m and 46m respectively. Using AUTOCAD, draw the required centre line of the road. **(15 marks)**

- b) Draw the road reserve with the proposed width of 40m **(5 marks)**

Question Five (20 marks)

- a) A bus-stand is required for a certain bus terminus. The stand should provide cover against falling rain and effects of direct sunlight to users. When seated in the stand, boarding or alighting a bus. Design the stand and draw the cross-section showing the following:
- Foundation type
 - Framing method
 - Roofing details.

(20 marks)