THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering & Technology

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

DIPLOMA IN BUILDING & CIVIL ENGINEERING
[Institutional Based Programmes]

EBC 2217: COMPUTER AIDED DESIGN I

END OF SEMESTER EXAMIANTION
SERIES: DECEMBER 2012
TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

1. ***A Laptop or Desktop Computer installed with AutoCAD***
2. ***Create a folder in the Desktop and name it DBC – Institutional; Save ALL your answer in this folder. Name ALL your files using your name and student number***

This paper consists of **FIVE** questions. Answer any **THREE** questions

Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

Question One

a) State **THREE** advantages and **ONE** disadvantage of using CAD in making engineering drawings over manual drafting. **(4 marks)**

b) Briefly describe the following CAD user-interface features:
(i) Title Bar
(ii) Pull-down menus
(iii) Command line **(6 marks)**

c) Explain the following:
(i) World Co-ordiante System (WCS)
(ii) User Co-ordinate System (UCS) **(6 marks)**

d) Explain the following systems of entering commands in the command line:
(i) Absolute Co-ordinates
(ii) Relative Co-ordinates **(4 marks)**

Question Two

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 given in the table below.

LOG	BEARINGS			DISTANCES IN METRES
	oo	‘	“	
AB	03	45	09	150.000
BC	104	22	44	187.000
CD	43	07	39	163.000

e) Leg AB and BC, and BC and CD are to be blended using curves of radii 41m and 46m respectively.
(i) Draw the proposed road centre line
(ii) Draw the road resolve with a proposed width of 40m. **(20 marks)**

Question Three

The figure below shows a simply shaped block in isometric.

In 3RD A.P., draw the following:

a) The found elevation as seen in the direction of arrow ‘Y’
b) The plan as seen in the direction of arrow ‘Z’
c) The end elevation as seen in the direction of arrow “X’ **(20 marks)**

Question Four

Low cost, 2 bedroom houses have been proposed in a slam upgrading scheme. Design and draw a suitable floor plan satisfying the following requirements:

(i)	Bedrooms:	Minimum floor area	=	10.89m2	
		Least room dimension	=	3.3m	
(ii)	Sitting Room:	Minimum floor area	=	12.96m2	
(iii)	Corridor/Lobbies	At least 1.050m wide			
(iv)	Front Verander	At leat 1.8m wide			
(v)	Loading bearing walls – 200mm thick				
(vi)	Non-loading bearing partition walls		=	150mm thick	
(vii)	W.C. and bath room (separate)				**(20 marks)**

Question Five

The following information relates to the proposed house in question four above:

(i) 200mm thick external load bearing stone block wall
(ii) 600mm wide x 200mm deep plain concrete strip foundation
(iii) Depth of strip foundation – at least 900mm below the average ground level
(iv) Solid ground floor slab – 100mm thick, at least 150mm above the average ground level
(v) Ceiling height = 3000m above the F.F.L

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)**