END OF SEMESTER EXAMINATIONS AUGUST - 2015

EXAMINATIONS FOR THE BRIDGING CERTIFICATE IN MATHEMATICS

UNIT CODE: CCBM 0102

UNIT TITLE: GRAPHICAL REPRESENTATIONS

DATE: AUGUST, 2015 **TIME: 2 HRS**

PART A: Answer TWO Questions in this section

QUESTION ONE

The following are the number of physicians in 81 selected large cities in a certain country

131	131	113	137	127	153	123	202	131
185	134	166	245	138	111	232	224	110
169	245	157	184	[illegible]	156	230	224	212
141	166	190	154	137	129	152	256	171
176	158	145	115	132	146	185	175	131
165	116	198	130	108	95	211	126	204
119	162	116	129	153	172	148	207	161
194	129	176	127	192	144	169	178	140
105	116	100	171	155	127	91	145	218

You are required to: -

i) Construct a stem-and-leaf diagram for the data (4 Marks)

ii) Group the data into a table having the class limits 70-89, 90-109, 110-129 etc (2 Marks)

iii) Construct a cumulative "or more" distribution and graph (6 Marks)

QUESTION TWO

The list below shows the consumption of principal raw materials in a blast furnace in one month:

Material	Consumption (tons, 000's)
Iron ore	142.7
Coking coal	85.5
Scrap	70.1
Limestone	29.9

You are required to: -

i) Draw a pie chart for the data set

ii) Draw a component bar chart for the data

iii) State what the techniques you would use to entice readers to use your diagrams in (i) and(ii) above (12 Marks)

QUESTION THREE

i) The polar coordinates of a point are $(6, \pi/3)$, find its rectangular Cartesian coordinates

ii) Find the polar co-ordinates of the point whose Cartesian coordinates are $(-5, 12)$

iii) What is the size of the angle in (ii) above in radians? (12 Marks)

PART B: Answer TWO Questions in this section

QUESTION FOUR

a) Find the x-intercepts of the graph of $f(x) = x^2 - 2x - 2$ (4 Marks)

b) Graph the function $f(x) = x^2 - x - 6$ and use your graph to approximate solutions to the following equations

i. $x^2 - x - 6 = 2$

ii. $x^2 - x - 6 = -3$ (8 Marks)

QUESTION FIVE

Solve the following pair of equations graphically

$y - x = 1$; $y + x = 3$ (12 Marks)

QUESTION SIX

The following figures come from a tourist resort on the census of production of textile machinery

Number of companies	Net output (£000's)
48	1,406
42	2,263
38	3,699
21	2,836
26	3,152
16	5,032
23	20,385

Required:

Analyze these results by means of a Lorenz curve and interpret the graphics display (12 Marks)

PART C: Compulsory Question

QUESTION SEVEN

"The most widely used graphical presentation of a frequency distribution is the histogram" discuss this statement in relation to the following orders of Kenyan coffee by an American miller.

Values of orders (in U.S. Dollars)	Number of orders
500-999	6
100-1499	12
1500-1999	19
2000-2999	33
3000-3499	8
3500-3999	2
	80

Your essay should be limited to not more than one hundred and fifty words (12 Marks)