TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

HIGHER DIPLOMA IN CONSTRUCTION

EBC 3112: COMPUTER AIDED DESIGN I

SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: MARCH 2014
TIME: 2 HOURS

<u>**Instructions to Candidates:**</u>
You should have the following for this examination
- *Answer Booklet*
- *Create a folder in the desktop and name it after your class i.e. HDBC 1; Save ALL your answers in this folder. Name your Microsoft word and AutoCAD files using your student registration number.*
This paper consist of **FIVE** questions
Answer question any **THREE** questions

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

SECTION A (Compulsory)

Question One (20 marks)

a) Explain the application of co-ordinates systems in fixing positions in CAD. (7 marks)

b) Explain the application of layers in making CAD drawings. (6 marks)

c) Explain the **THREE** methods of accessing commands in a CAD system (7 marks)

SECTION B (Answer any TWO questions)

Question Two (20 marks)

The following information relates to a stair case to a proposed multistory office building:
- Riser = 150mm
- F.F.L to F.F.L Height = 3300mm
- Width of flight = 1050mm
- Take 2R + G = 575

Using CAD, draw a section through the first two flights and landing (20 marks)

Question Three (20 marks)

a) A closed couple roof has been suggested for a proposed car-pot. The following information refers to the roof:
- Pitch of roof = 38º
- Clear span = 4.8m
- Battens = 38 x 25mm @ 300 c/c
- Rafter = 150 x 50mm
- Collar or ceiling joists = 200 x 50mm
- Ridge board = 32mm thick
- Wall plate = 100 x 50mm
- Load bearing wall = 200 mm thick

Using CAD, draw the cross-section of the roof (Tiles need not shown) (20 marks)

Question Four (20 marks)

Use the information given below to draw the rear elevation of a framed, ledged and braced match boarded door.
- Stile (s) = 95 x 45mm
- Brace = 95 x 27mm
- Middle rail = 146 x 27mm
- Bottom rail = 146 x 27 mm
- Match boarding = 16cm thick t and g boarding
- Door width = 820mm

- Door height = 2050mm (20 marks)

Question Five (20 marks)

The following sketch shows a joiner's design of a moulded timber handrail. Using CAD, draw the outline of the section of the handrail and determine dimensions 'a' and 'b.

Moulded Hardwood Hard Raw