



# MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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## University Examinations 2012/2013

FIRST YEAR, SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

### BIT 2111: COMPUTER AIDED DESIGN

DATE: APRIL 2013

TIME: 2 HOURS

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INSTRUCTIONS: Answer question *one* and any other *two* questions

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#### QUESTION ONE – 30 MARKS

- a. Define the following terms:
  - i. Engineering (1 Mark)
  - ii. Testing (1 Mark)
  - iii. Inspection (1 Mark)
  - iv. Compiler (1 Mark)
  - v. Reissue (1 Mark)
  - vi. Model (1 Mark)
  - vii. Coordinate system (1 Mark)
  - viii. Dimension (1 Mark)
- b. During the testing and evaluation of a design, describe two benefits that accrue from the integration of CAD and CAM functions. (4 Marks)
- c. Describe any three serious deficiencies exhibited by wire frame models when used to model engineering artefacts. (6 Marks)
- d. Give examples of four different cursor modes in AutoCAD. (4 Marks)
- e. Distinguish between models of forms and models of structure. (4 Marks)
- f. Discuss the AutoCAD functions that have replaced the following traditional design tools.
  - i. Pencils and ink markers. (1 Mark)
  - ii. Rulers and protractors (1 Mark)
  - iii. Erasers (1 Mark)
  - iv. Drawing vaults (1 Mark)

## QUESTION TWO – 20 MARKS

a. Give the step by step procedure to create the drawing below in the shortest time. (10 Marks)

- b. Discuss any three differences between traditional design office and the computer assisted design office. (6 Marks)
- c. List any two Dimension tools and two Modify tools in AutoCAD. (4 Marks)

## QUESTION THREE – 20 MARKS

- a. Describe four functions of the space key in AutoCAD. (4 Marks)
- b. Describe and illustrate two conventions for model representation in CAD systems. (6 Marks)
- c. Distinguish between Windowing and Crossing in AutoCAD. (4 Marks)
- d. Discuss the convention used in CAD systems for linear and angular measurements. (4 Marks)
- e. Describe the functions of the middle mouse button in AutoCAD. (2 Marks)

## QUESTION FOUR – 20 MARKS

- a. During a hatch operation, what is the difference between the following two options when choosing an area to hatch? (4 Marks)
- i. Pick a point
  - ii. Pick objects
- b. In AutoCAD how would you convert a line segment drawing of a rectangle into a polyline? (8 Marks)
- c. Distinguish between the following commands:
- i. Rotate and revolve (4 Marks)
  - ii. Polyline and line (4 Marks)

**QUESTION FIVE – 20 MARKS**

- a. Certain standards must be maintained through the stages of product development.
  - i. Explain why standards are developed for design purposes. (4 Marks)
  - ii. Briefly describe product oriented standards. (2 Marks)
- b. Discuss the main considerations while evaluating a CAD system. (4 Marks)
- c. You are to design the stair case model below. The text is at the same inclination as the stairs.  
Write down the steps to accomplish this task in AutoCAD. (10 Marks)