



W1-2-60-1-6

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY.

UNIVERSITY EXAMINATIONS 2016/2017.

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

BIT 2111: COMPUTER AIDED DESIGN

DATE: DECEMBER 2017

TIME 2HRS.

**INSTRUCTIONS:** Attempt question ONE (Compulsory) and any other TWO questions. Use practical examples to support your argument. Do not write on the Question paper

Question 1: (30 Marks)

- a) Explain the meaning of design approach and briefly explain any two designs approaches. (4mks)
- b) Explain activities that take place in the various design stages. (4mks)
- c) Define the following terms ( 8 Marks)
  - i) Engineering
  - ii) Testing
  - iii) Inspection
  - iv) Compiler
  - v) Reissue
  - vi) Model
  - vii) Coordinate system
  - viii) Dimension
- d) During the testing and evaluation of a design, describe two benefits that accrue from the integration of CAD and CAM functions. (4 Marks)
- e) Describe any TWO serious deficiencies exhibited by wire frame models when used to model engineering artifacts. (4 Marks)
- f) Discuss any THREE differences between traditional design and the computer – assisted design using a CAD software . (4 Marks)



**Question 2: (20 Marks)**

(6 Marks)

- a) Describe four software components of CAD systems
- b) The shade mode command provides shading and wireframe option for the objects in the current view point. Explain briefly the following options. (4mks)
- (i) Hidden (6mks)
  - (ii) Flat shaded
  - (iii) Gouraud
- c) When you start AutoCAD, the AutoCAD window opens. The window is your design workplace. It contains elements that you use to create your designs and to receive information about them. Explain three parts of the AutoCAD window.
- d) Explain any three benefits accrued from setting CAD standards (6mks)

**Question 3: (20 Marks)**

(4mks)

- a) Describe and illustrate two conventions for model representation in CAD systems.
- b) Discuss any two advantages of using blocks in CAD. (6 Marks)
- (c) Distinguish between: (8marks)
- (i) Spline and pline commands
  - (ii) Process oriented standards and product oriented standards
  - (iii) Model space and paper space

(6marks)

**Question 4: (20 Marks)**

- a) In AutoCAD or any other CAD software, how would you convert a line segment drawing of a rectangle into a polyline? (8 Marks)
- b) Distinguish between the following commands.
- i. Rotate and revolve (4Marks)
  - ii. Polyline and Line (4Marks)
- b) Explain its importance in engineering design (4mks)

**Question 5: (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. (4Marks)
- b) Discuss the main considerations while evaluating a CAD system. (6 Marks)
- c) Describe any two 3D basic types of models (6mks)