# MACHAKOS UNIVERSITY

**University Examinations 2018/2019**

**SCHOOL OF ENGINEERING AND TECHNOLOGY**

**DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING**

**SECOND YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR**

**DIPLOMA IN MECHANICAL ENGINEERING**

**MED-PR 218: AutoCAD I**

**DATE: 1/8/2019**                                        **TIME: 8.30-10.30 AM**

**INSTRUCTIONS:**

**Answer Question One (Compulsory) and Any Other Two Questions**

1. a) Explain SIX advantages that CAD has over conventional drafting methods.

   (12 marks)

   b) Explain the meaning of the following commands: -

   i. Erase

   ii. Mirror

   iii. Offset

   iv. Array                                             (12 marks)

   c) Write the command steps that are followed to draft the template shown in figure1.

   (6 marks)

2. a) With the aid of a sketch, explain the "CAD STATION"          (10 marks)

   b) Write the procedure of setting paper size (1109,703) in AutoCAD.     (4 marks)

   c) State the purpose of the following commands:-

   i. Move

   ii. Object snap

   iii. Ortho mode                                        (6 marks)

3.  a)  Explain THREE methods of invoking commands in AutoCAD.        (6 marks)

    b)  Explain THREE methods of drawing lines in AutoCAD.        (6 marks)

    c)  Explain the purpose of the COMMAND window        (2 marks)

    d)  Given bellow are command steps for drafting a plane figure. Use a cartesian plane to sketch it.

        Command:                LINE    (Enter)

        Specify first point:        60,20  (Enter)

        Specify next point:        60,120 (Enter)

                "                80,120 (Enter)

                "                80,40   (Enter)

                "                100,40 (Enter)

                "                120,60  (Enter)

                "                140,60  (Enter)

                "                140,20  (Enter)

                "                60,20  (Enter)

                "                Close   (Enter)        (6 marks)

4   a)  Explain the procedure of:

        i.      loading a CENTER LINE on an AutoCAD drawing screen.

        ii.     changing the AutoCAD drawing screen background colour to GREEN.

                                                                (8 marks)

    b)  Explain the function of the following commands:

        i.      hatch

        ii.     trim

        iii.    polygon        (6 marks)

    c)  List the commands that can be followed to draft the profile shown in figure 2 using relative polar coordinates.        (6 marks)

5   a)  Write the procedure of executing the following commands:

        i.      Zoom window

        ii.     Snap to quadrant

        iii.    Snap to Centre        (9 marks)

b) Sketch the screen output of the following AutoCAD command line inputs on a cartesian plane.

| | |
|---|---|
| COMMAND: | LINE (enter) |
| Specify first point: | 100,100 (Enter) |
| Specify next point: | @50<90 (enter) |
| " | @100<0 (enter) |
| " | @100<30 (enter) |
| " | @37.5<0 (enter) |
| " | @50<-90 (enter) |
| " | @50<180 (enter) |
| " | @50<-90 (enter) |
| " | @50<0 (enter) |
| " | @50<270 (enter) |
| " | @37.5<180 (enter) |
| " | @100<150 (enter) |
| " | @100<180 (enter) |
| " | ENTER (11 marks) |