



# THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of Jkuat)

*Faculty of Engineering and Technology*

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

**HIGHER DIPLOMA IN BUILDING & CIVIL ENGINEERING (HDBC 10)**

EBC 3319: COMPUTER AIDED DESIGN II

**END OF SEMESTER EXAMINATION**

SERIES: AUGUST/SEPTEMBER 2011

**TIME: 3 HOURS**

**Instructions to Candidates:**

This paper consists of **TWO** sections: Section **I** and **II**

Section 1 has 30 marks and section II has 40 marks

Attempt **ALL** questions in Section I and only **TWO** questions from section **II**

You should have the following for this examination

- *Answer booklet*
- *Laptop/Desktop Computer*

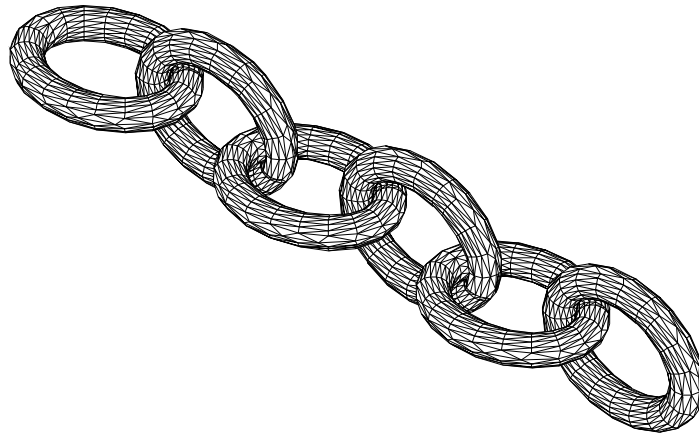
Save your answer in AutoCAD using your FULL names followed by your student number

This paper consists of **SIX** printed pages

## SECTION I

### Question 1

- a) Explain the **SEVEN** major stages involved in the design process (14 marks)
- b) List down the steps involved when plotting or printing a drawing (8 marks)
- c) Each link of the chain below has been constructed using the Extrude tool, extruding a small circle R15 along an elliptical path 100x75. Copies of the link are then made, half of which were rotated using 3D Rotate and moved into their position relative to other links. Working to suitable sizes, construct a link and from the link construct the chain as shown (8 mark)

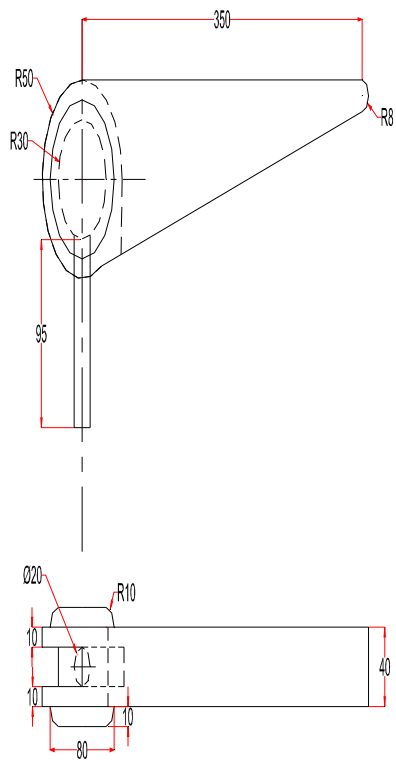


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## SECTION II (Answer any TWO questions)

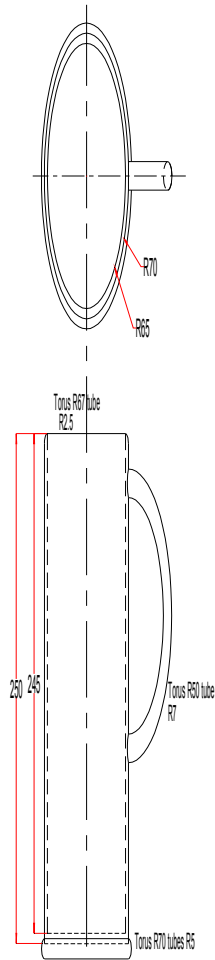
### Question 2

A two-view orthographic projection of a rotatable lever from a machine is given below. Construct the 3D model drawing in a Four: Equal viewport setting (20 marks)



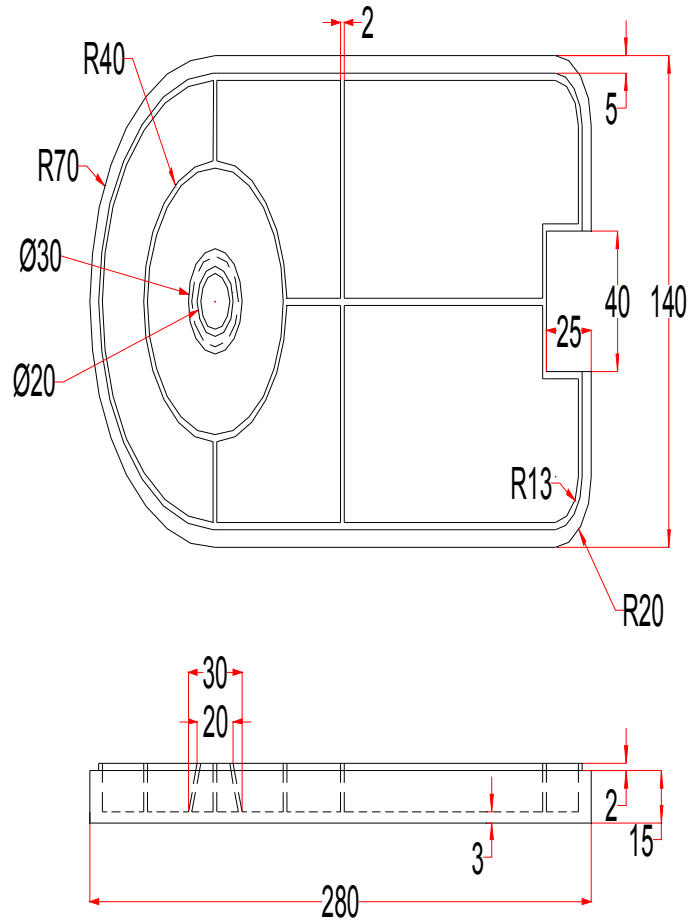
### Question 3

Construct a solid of revolution of the jug shown in the orthographic projection shown. Construct a handle from an extrusion of a circle along a semicircular path. Union the two parts. Place the 3D model in a suitable isometric view and render (20 marks)



#### Question 4

Working to the sizes given below, construct a 3D model drawing of the drip tray from an engine. Add lighting and a suitable material, place the model in an isometric view and render (20 marks)



### Question 5

A fork connector and its rod are as shown in the three view projection shown below. Construct a 3D model drawing of the connector with its rod in position. Then add lighting to the scene, place in an isometric viewing position, and materials to the model and render (20 marks)

