



MACHAKOS UNIVERSITY

University Examinations 2017/2018

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

FIRST YEAR FIRST SEMESTER EXAMINATION FOR BACHELOR OF SCIENCE IN
ELECTRICAL AND ELECTRONICS ENGINEERING
EEE 100:ENGINEERING DRAWING I

DATE: 20/12/2017

TIME: 8.30-11.30 AM

INSTRUCTIONS

1. This paper contains **FIVE** questions.
2. Answer Question **One** and any other **two** questions
3. Allow 1½ Hours for question 1 and 45 minutes for each of the other two questions.
4. All dimensions are in millimetres unless otherwise stated.
5. Construction lines should be faint and should not be erased.
6. Accuracy and good line work are essential.

QUESTION ONE (COMPULSORY) (30 MARKS)

The **Figure Q1 (a) and (b)** shows isometric views of a **Support Bracket**. Draw, full size, using first angle projection, the following views: **Front, Top and left side views. Front view is indicated by the arrow.** Include all hidden details and show dimensions.

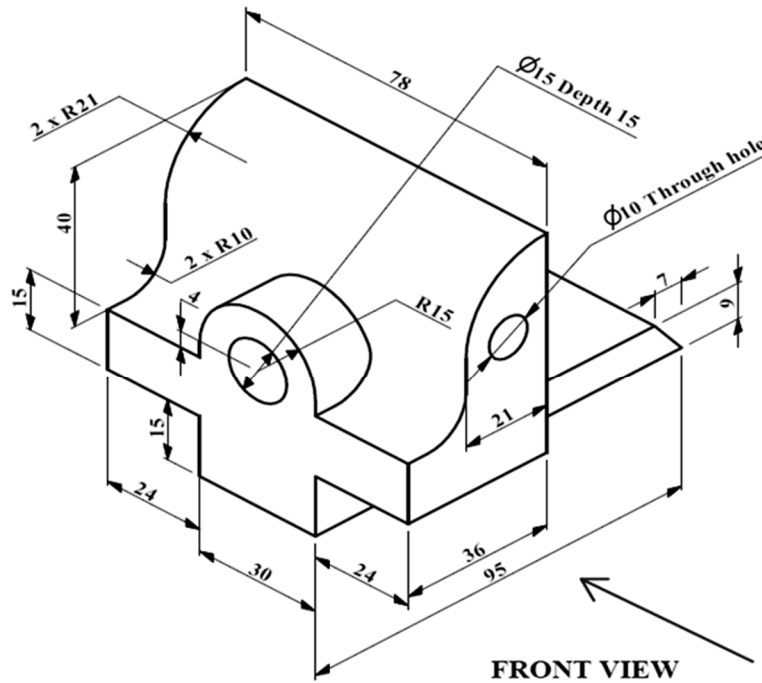


Figure Q1 (a)

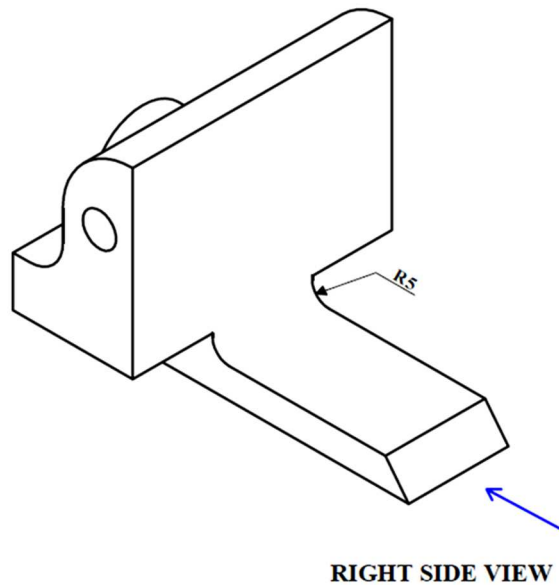


Figure Q1 (b)

QUESTION TWO (20 MARKS)

A piece of string AB, shown in **Figure Q2**, is wrapped around the cylinder, centre O, in a clockwise direction. The length of the string is equal to the circumference of the cylinder.

- Plot the path of the end B of the string as it is wrapped round the cylinder, keeping the string taut.
- Name the curve you have drawn, **indicating it as the title** in the title block

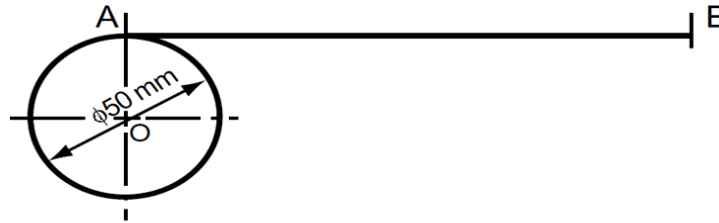


Figure: Q2

QUESTION THREE (20 MARKS)

Plot the cam profile which meets the following specification:

Shaft diameter	30 mm
Minimum diameter	50 mm
Lift	24 mm
Performance	90° uniform velocity to maximum lift
	90° dwell
	180° uniform retardation to maximum fall
Rotation	Clockwise

QUESTION FOUR (20 MARKS)

Figure Q4 shows a sectional detail of a feed screw for a machine. Draw an elevation of the screw for a length of 192mm, showing the helical threads at both outside and root diameters.

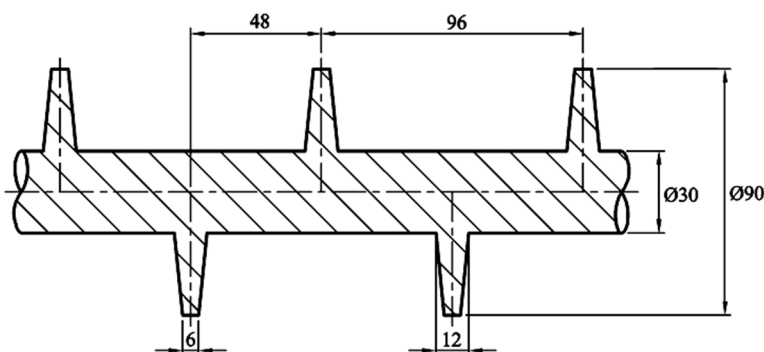


Figure Q4

QUESTION FIVE (20 MARKS)

The plan and incomplete elevation of two pipes are shown in **Figure Q5**. Copy the three views, full size, and complete the elevations showing all the hidden detail with the curves of intersection. Indicate the dimensions. (**Use first angle projection**). (20 marks)

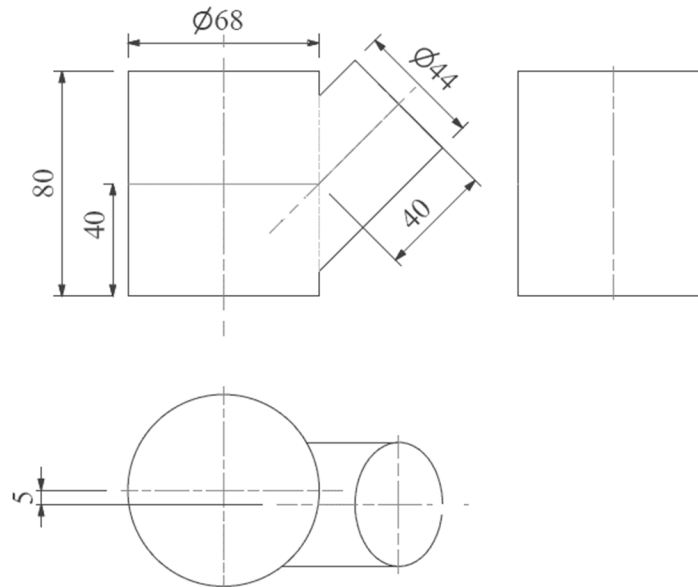


Figure Q5