MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

…….YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

EEE100 ENGINEERING DRAWING I

DATE: **TIME:**

INSTRUCTIONS:

Answer Question One and Any Other Two Questions

All dimensions are in **millimetres.**
Construction lines should be faint and should not be erased.
Accuracy and good line work are essential.

QUESTION ONE (COMPULSORY) (30 MARKS)

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

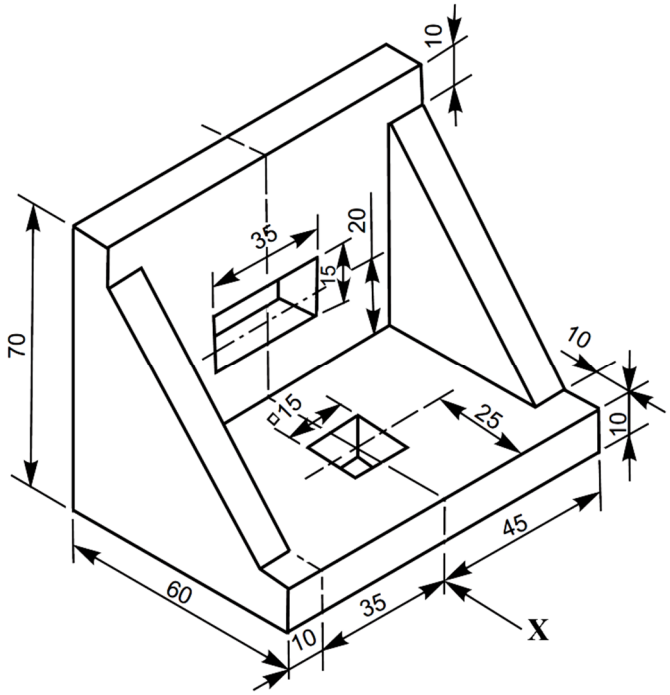

Figure Q1(a)

(b) Draw, full size, an isometric projection of the component shown in **Figure 1(b)** below. Point A is to be the lowest point of the projection. Hidden details are not to be shown.

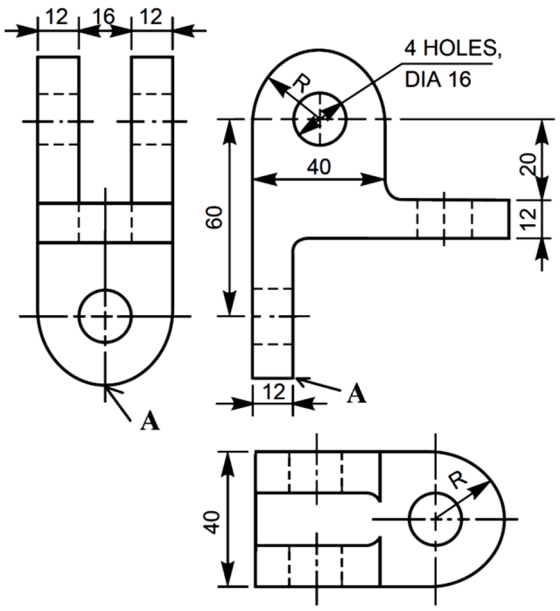

Figure Q1(b)

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.

(a) Plot the path of the end B of the string as it is wrapped round the cylinder, keeping the string taut.

(b) Name the curve you have drawn, **indicating it as the title** in the title block

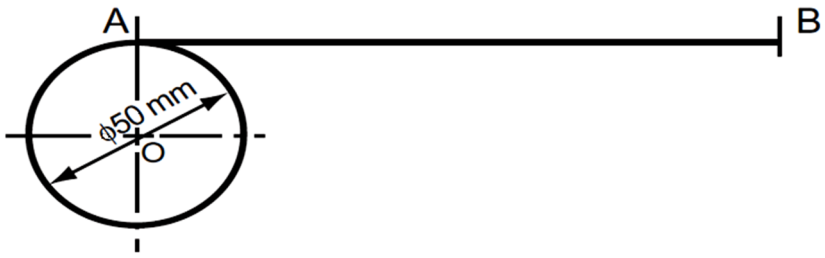

Figure: Q2

QUESTION THREE (20 MARKS)

Plot the cam profile which meets the following specification:

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

QUESTION FOUR (20 MARKS)

Figure Q4 shows the orthographic projection of measuring oil can. Draw the development of its parts: 1, 2 and 3.

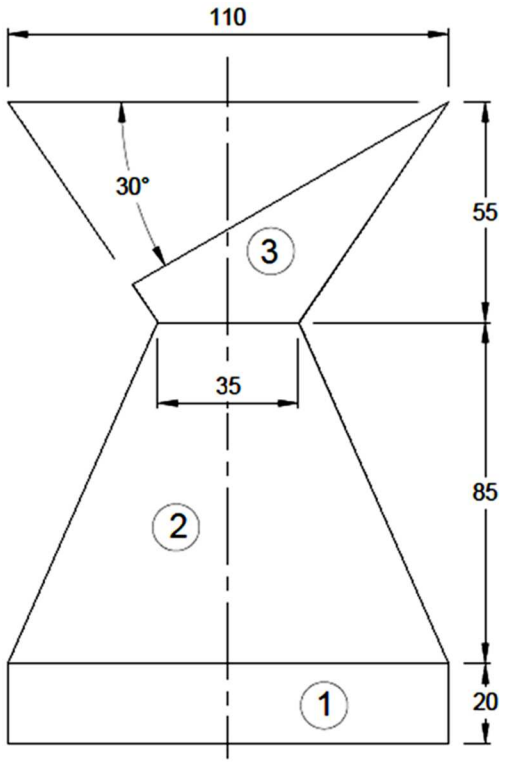

Figure Q4

QUESTION FIVE (20 MARKS)

A vertical cylinder of diameter 120mm is fully penetrated by a cylinder of diameter 90mm, their axes intersecting each other. The axis of the penetrating cylinder is inclined at 30^{o} to the HP and is parallel to the VP. Draw the top and front views of the cylinders and the curves of intersection. (Use first angle projection).