



**JOMO KENYATTA UNIVERSITY  
OF  
AGRICULTURE AND TECHNOLOGY**

**University Examinations 2016 / 2017**

**SECOND YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR  
OF SCIENCE IN LAND RESOURCES PLANNING AND MAGEMENT**

**ECE 2331 : INTRODUCTION TO ENGINEERING DRAWING**

**DATE: DECEMBER, 2016**

**TIME : 3 HOURS.**

**INSTRUCTIONS**

- ( i ) This paper contains FIVE (5) questions.
- ( ii ) You are required to answer THREE (3) questions only.
- ( iii ) Answer question one and any two questions out of the remaining four.
- ( iv ) Question one carries 30 marks and the others carry 20 marks each.
- ( v ) Construction lines should be faint and should not be erased.
- ( vi ) All dimensions are in millimeters unless otherwise stated.
- ( vii ) Missing and mismatching dimensions, if any, may be suitably assumed.



## QUESTION 2 (20 MARKS)

- (a) Fig. Q2(a) shows two orthographic views, i.e front view and plan, of a bracket drawn in 3<sup>rd</sup> angle. Study the given views and construct using a suitable scale the an oblique (Cavalier) drawing of the bracket with face "F" towards the front  
( 9 marks )
- ( b ) Fig. Q2(b) shows 2 views of a machined block drawn in 1<sup>st</sup> angle projection. Draw to a suitable scale an isometric view of the block making corner A the lowest point.  
( 11 marks )

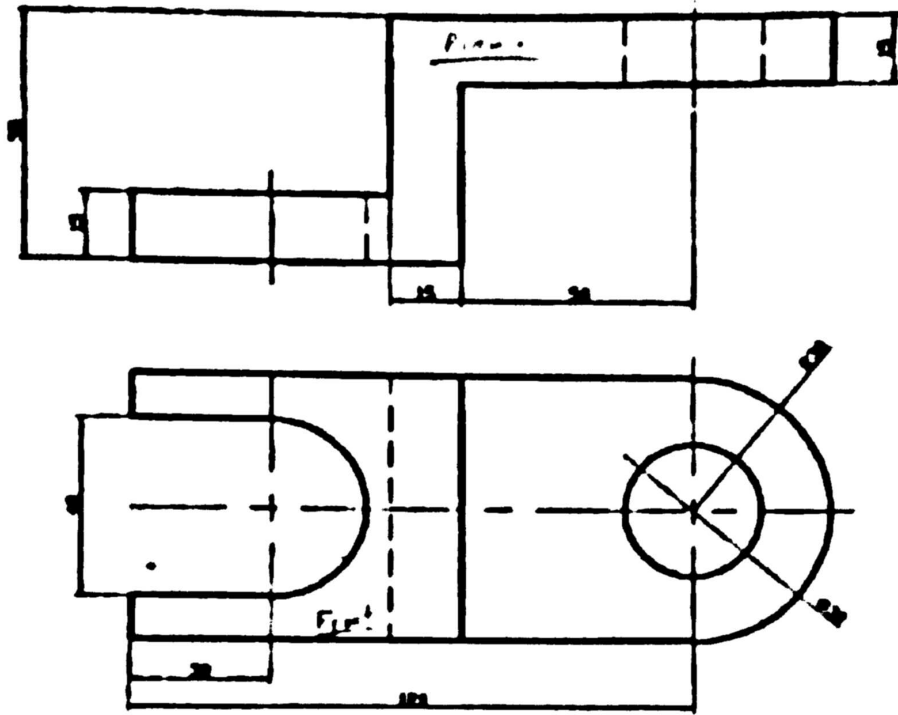


Fig. Q2(a)

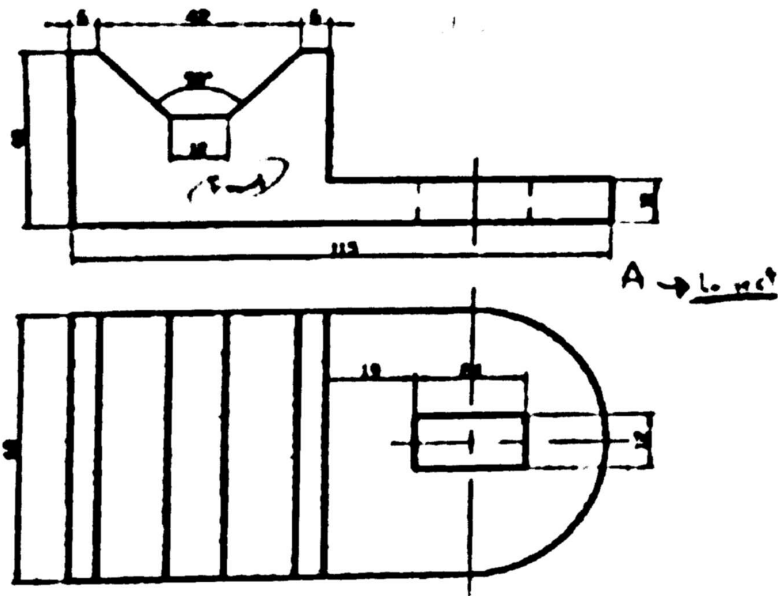


Fig. Q2(b)

### QUESTION THREE (20 MARKS)

- (a) A circle of 50 mm diameter rolls on a straight line without slipping. Trace the locus of a point 'p' on the circumference of the circle rolling for one revolution.
- (i) Name the curve
  - (ii) Draw normal and tangent to the curve at any point on the curve (10 marks)
- (b) (i) Construct a parabola when the distance between the focus and the directrix is 30 mm.
- (ii) Draw the tangent and normal at any point on the curve. (10 marks)

### QUESTION FOUR (20 MARKS)

- (a) The views in Fig. Q4(a) represent two discs which roll along AB. Both discs start at the same point and roll in the same direction. Plot the curves for the movement of points p and q and state the perpendicular height of p above AB where q again coincides with the line AB. (13 marks)
- (b) Fig. Q4(b) shows a crank OA which revolves in clockwise direction around pivot O. Link AB is pin-jointed at A and end B always slides along the horizontal line CD. Plot the locus of point P on the line for one revolution of OA. (7 marks)

### QUESTION FIVE (20 MARKS)

Sketch freehand the isometric blocks represented by the orthographic views in fig. Q5 and draw the views missing in spaces shown. Show hidden detail where applicable. (20 marks)

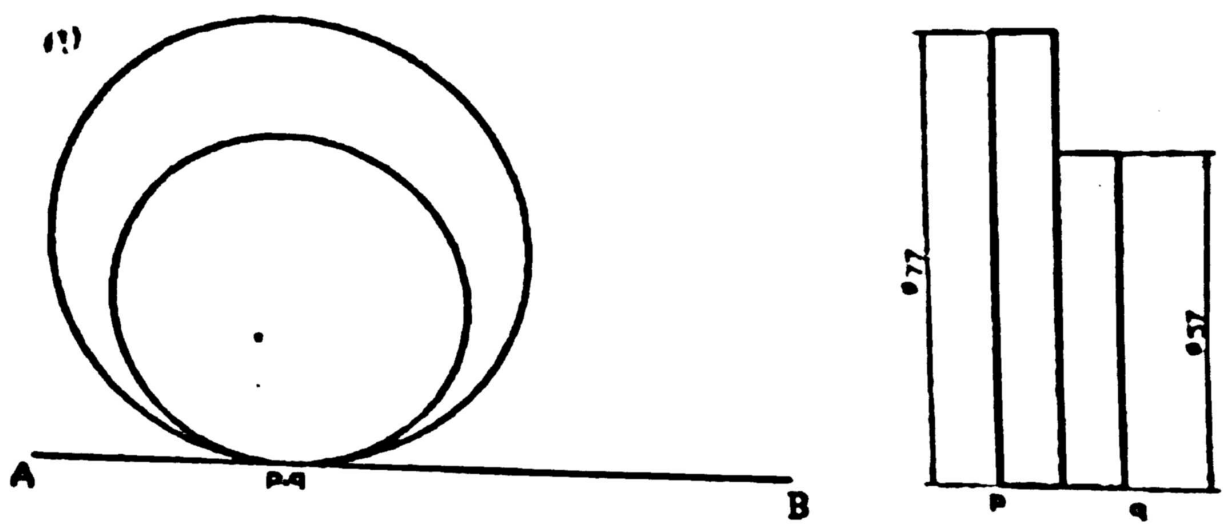


Fig. Q4(a)

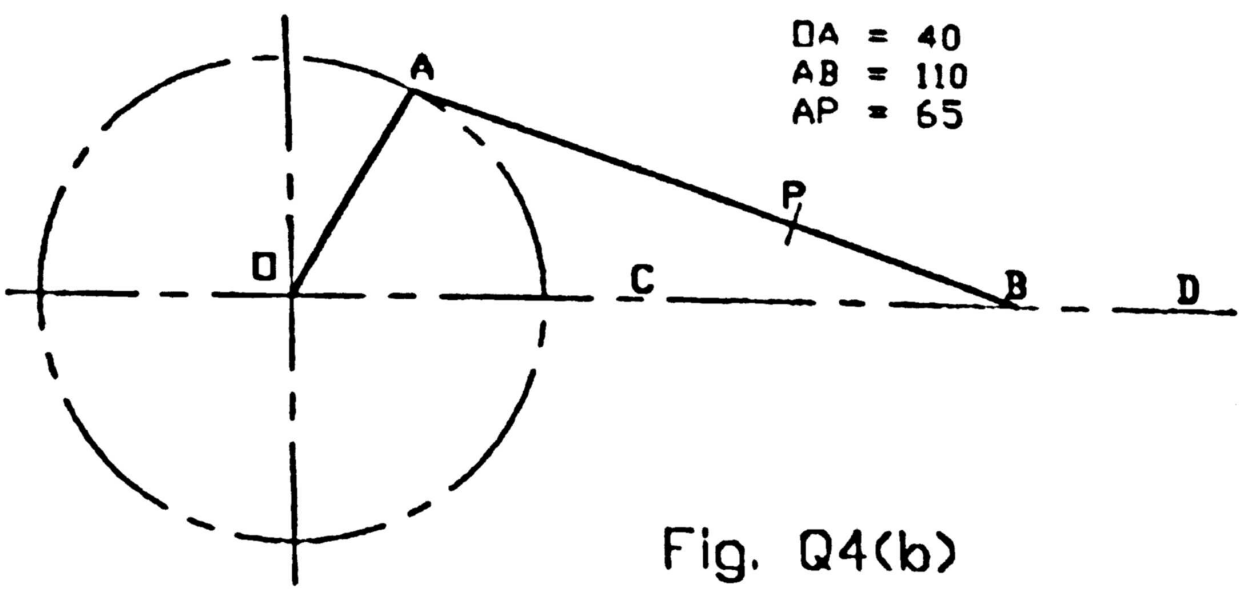
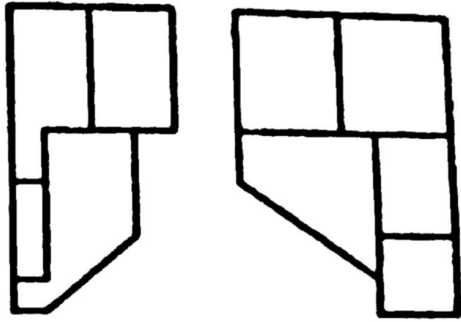


Fig. Q4(b)

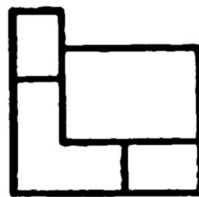
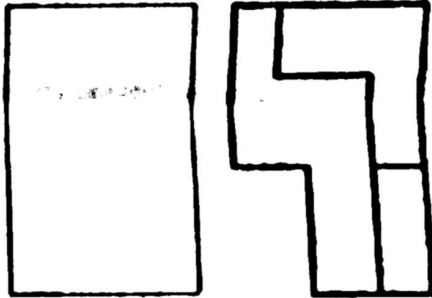
Fig. 05



A



B



C D

