



MACHAKOS UNIVERSITY

University Examination 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF BUILDING AND CIVIL ENGINEERING
SECOND YEAR FIRST SEMESTER EXAMINATION FOR
BACHELOR OF SCIENCE IN CIVIL ENGINEERING
ECV 100: ENGINEERING DRAWING MATERIALS I

DATE:

TIME:

INSTRUCTIONS

Answer **Three** Questions. Question **One** Is Compulsory

1. a) Construct an ellipse whose
 Major axis=80mm
 Minor axis=60mm, using intersecting lines method (10 marks)
- b) Draw Tangent and Normal to the ellipse in 1b) above (10 marks)
- c) Using **Universal method**, construct a regular heptagon (10 marks)
2. a) Construct a parabola with focus (f) 20mm from a horizontal directrix. (10 marks)
- b) Construct a hyperbola with an eccentricity of 1.25 and focus(f) of 20mm from a vertical directrix. (10 marks)
3. a) Construct a helix of diameter 60mm and determine; (10 marks)
 i) Helix pitch (5 marks)
 ii) Helix angle (5 marks)
4. **Fig. Q 2** shows a solid block. Using Third angle orthographic projection, draw;
 a) Front Elevation in the direction F (10 marks)
 b) Plan (5 marks)
 c) End View (5 marks)

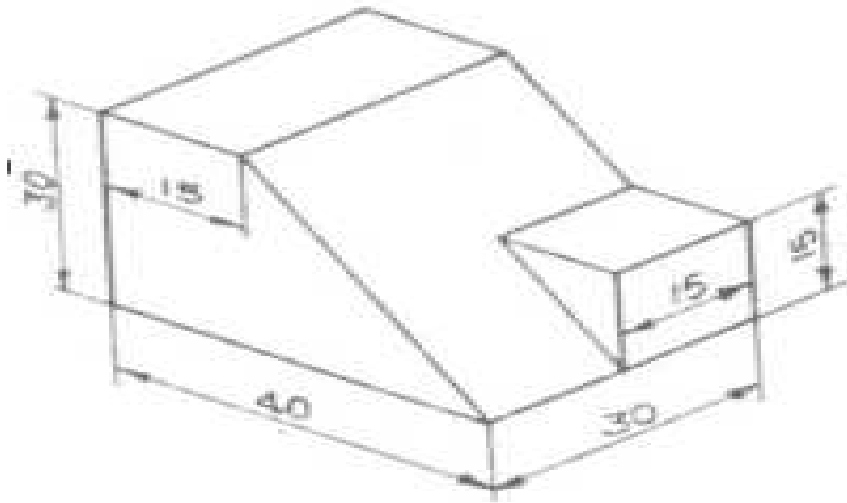


Fig. Q 2

5. a) Draw a regular hexagon of side 50 mm using the **universal method** (5 marks)
- b) **Fig. Q5** shows a regular pentagonal prism. Using first angle orthographic projection draw
- i) Front Elevation (5 marks)
- ii) Plan (5 marks)
- iii) End elevation (5 marks)

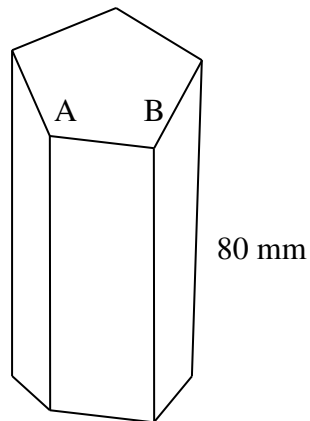


Fig. Q5

AB = 30 mm

height = 80 mm