MACHAKOS UNIVERSITY

University Examinations 2016/2017

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

FIRST YEAR FIRST SEMESTER DIPLOMA IN ELECTRICAL AND ELECTRONICS ENGINEERING

EED 103: ENGINEERING DRAWING

DATE: 26/7/2017 **TIME: 2:00 – 4:00 PM**

INSTRUCTIONS:

This paper consists of FIVE Questions. Answer <u>Question ONE</u> and <u>ANY OTHER TWO</u> questions.

QUESTION ONE (COMPULSORY) (30 MARKS)

a) Explain the importance of Technical Drawing for Engineering Technicians (5 marks)

b) Draw and briefly explain any five types of lines applied in technical drawing (10 marks)

c) Construct a triangle ABD circumscribed in a circle where AB =70mm, BD= 65mm and AD= 45mm (5 marks)

d) By the use of a pair of compass and a ruler only, show that angles in a semi-circle are right angles (5 marks)

e) Construct a circle inscribing a triangle LMN, where LM= 70mm, MN=LN= 80mm (5 marks)

QUESTION TWO (20 MARKS)

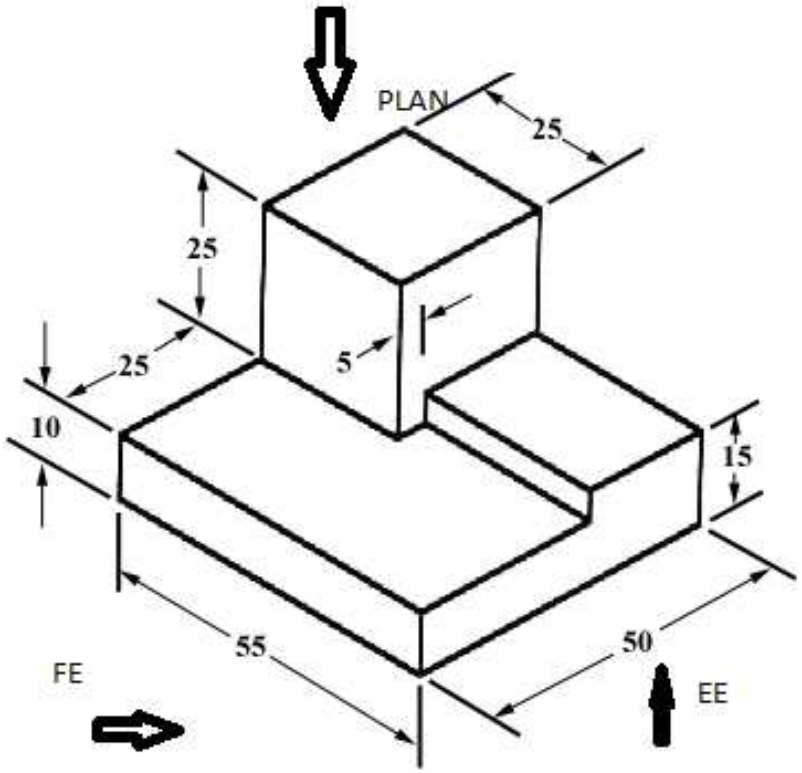
a) Construct an external line tangent between two circles of unequal diameter and 100mm apart. Where circle A and B are 20mm and 40mm respectively (7 marks)

b) By using a pair of compass and a ruler, construct an angle of 105º (3 marks)

c) Draw the front elevation, end elevation and plan of the following block (10 marks)

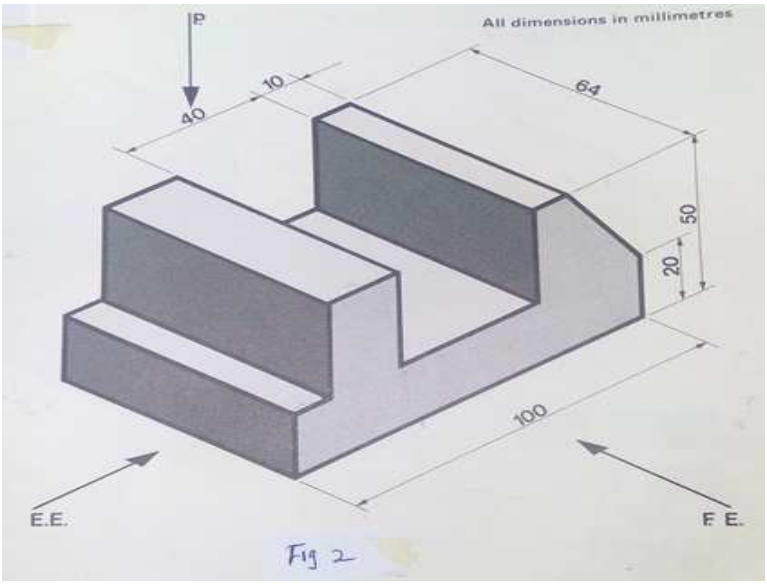
QUESTION THREE (20 MARKS)

The following figure represents an isometric view of a block diagram, draw the plan, front elevation, and end elevation in third angle projection. (20 marks)



QUESTION FOUR (20 MARKS)

a) Draw the plan, the front elevation and the end elevation in the third angle projection.



(10 marks)

b) Draw a regular pentagon of side 55 mm and inscribe in it the same number of equal circles as the sides of the pentagon, each circle touching one side of the pentagon and two of the other circles externally. (10 marks)

QUESTION FIVE (20 MARKS)

Draw the front view, the top view and the left-hand side view of a hexagonal prism, having its base on the H.P (Horizontal Plane) and one of the edges of the base is inclined at 60° to the V.P (Vertical Plane). Use the FIRST ANGLE method of projection. Also draw the development of the lateral surface of this prism.

Given: Side of the base = 50 mm

Length of the axis = 75 mm (20 marks)