MACHAKOS UNIVERSITY

University Examinations 2016/2017

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

FIRST YEAR FIRST SEMESTER EXAMINATION FOR

CERTIFICATEIN ELECTRICAL AND ELECTRONICS ENGINEERING

SUPPLEMENTARY/ EXAMINATION

EPC 102: TECHNICAL DRAWING 1

DATE: 28/8/2017 **TIME:2 HRS**

Instructions

1. Answer all the four questions
2. Correct use of symbols, units and dimensioning will earn marks
3. Clean work earns marks

QUESTION ONE (COMPULSORY)

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

b) a. 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)

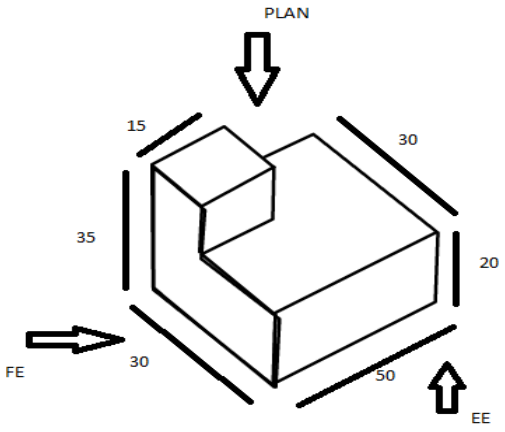
e) Construct a circle inscribing a triangle LMN, where LM= 70mm, MN=LN= 80mm (5 marks)

QUESTION TWO

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)

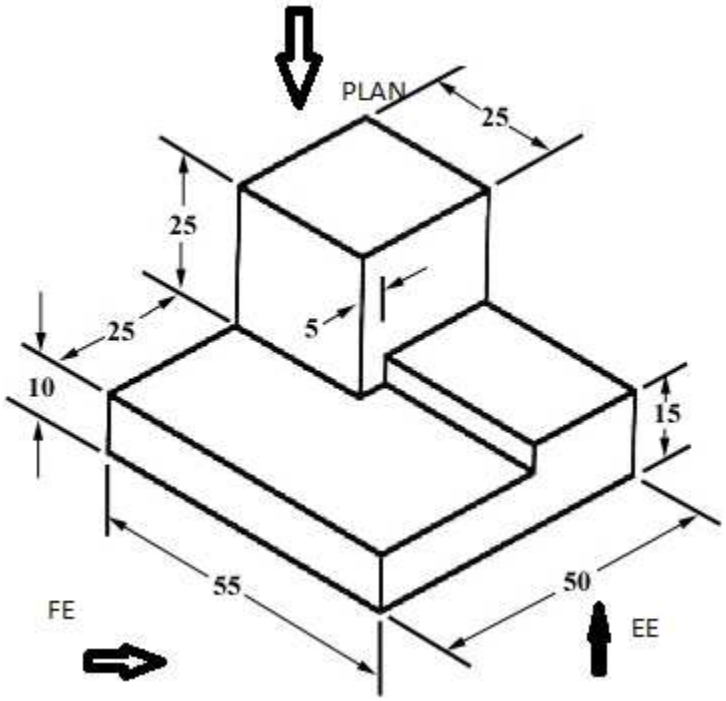
b) By using a pair of compass and a ruler, construct an angle of 105º (3 marks)

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



QUESTION THREE

The following figure represents an isometric view of a block diagram,



QUESTION FOUR

a) With the aid of well labeled diagrams, draw the symbols of the following electrical components.

i) Fuse

ii) High voltage primary fuse cut out

iii) Lighting arrestor

iv) Circuit breaker general gap type

v) Circuit breaker 3-pole with magnetic overload device (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

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)