



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations for 2014/2015

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

FIRST YEAR FIRST SEMESTER EXAMINATION FOR DIPLOMA IN CIVIL
ENGINEERING

BCE CD 109: ENGINEERING DRAWING I

DATE: 10/4/2015

TIME: 8:30 – 10:30 am

Instructions

- *This paper consists of five questions.*
- *Question one is compulsory and carries 30 marks*
- *Answer any other two question*

1. A) Briefly explain the uses of the following drawing instruments.

- i) Tee square,
- ii) Set square
- iii) Protractor
- iv) Pair of compasses
- v) Divide

(5 marks)

b) Draw a line 105 mm and divide it into a ratio of 2:4:5

c) By use of a pair of compasses construct the following angles

- i) 60°
- ii) 15°
- iii) 45°
- iv) 165°
- vi) 30°

(5 marks)

d) i) Construct a triangle ABC given the following data – AB = 75mm, BC = 100 mm, AC

= 70 mm

(5 marks)

ii) Print the following paragraph in lower case letters

Good lettering and neat lifework are very pleasing to look at on a drawing, and constant practice is aimed at production plain and clear figures which results in attainment of a good standard.

(10 marks)

2. A) Draw the following types of lines

i) Construction line,

ii) Object line

iii) Breaking line

iv) Hidden detail line

v) Centre lines

b) Draw a circle 35mm and show the following

i) Sector

ii) Arc

iii) Chord

iv) Segment

vi) Tangent

(10 marks)

3. A) i) Draw a perpendicular to a given straight line from a point 20mm below the straight line.

ii) Draw a line 105 mm long and bisect it.

(10 marks)

b) i) Construct a regular hexagon given one side = 45 mm.

ii) Draw a line 120mm long and divide it into seven equal parts.

(10 marks)

4. A) Show the following types of analysis

i) Acute angle

- ii) Obtuse angle
 - iii) Reflex angle
 - b) Construct rectangle of sides, 75 x 50mm and convert it into a square of equal area.
(10 marks)
5. A) Construct an ellipse using the concentric circles method given the major and minor axes as 115 and 70 respectively. (9 marks)
- b) Construct the centre of a circle whose radius is 30 mm. (5 marks)
 - c) Inscribe a square in a circle of radius 30mm. (6 marks)