

TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MEDICAL ENGINEERING

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN MEDICAL ENGINEERING

EME: 2107: ENGINEERING DRAWING & DESIGN I

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: SEPTEMBER 2018

TIME: 2HOURS

DATE: Pick Date Sep2018

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

Drawing paper

Engineering drawing set, T-square

Calculator

This paper consists of five questions.

Attempt **question ONE (Compulsory)** and any other **TWO** questions.

Do not write on the question paper

QUESTION ONE (COMPULSORY)

Q1 Figure 1 shows the profile of an engineering system template. Construct, on a scale 1:1, to show the profile. Construction lines should be retained and do not dimension the profile.

(30 marks)

QUESTION TWO

Using the method of crossed-belt tangents to the circles, Draw the application diagram of tangents to two circles with 50mm-diameter and 38mm-diameter, respectively, with centers 54mm apart.

(20 marks)

QUESTION THREE

(a) Define the following terms as used in engineering drawing

- (i) Chord
- (ii) Arc
- (iii) Concentric circles
- (iv) Tangent
- (v) Normal

5marks)

(b) Draw the involute of a 20-mm-diameter circle

(15 marks)

QUESTION FOUR

(a) Using the center of the space as the pole, draw a spiral of Archimedes with the generating point moving in a counterclockwise direction and away from the pole at a rate of 25mm in each convolution.

(15 Marks)

(b) Construct a circle to pass through two given points A and B and to touch a given circle K.

Marks)

QUESTION FIVE

Construct a reduction scale of 1:5 to measure to 10mm, up to a length of 600mm.

- (i) State the RF for the scale
- (ii) State the scale.

(20 marks)

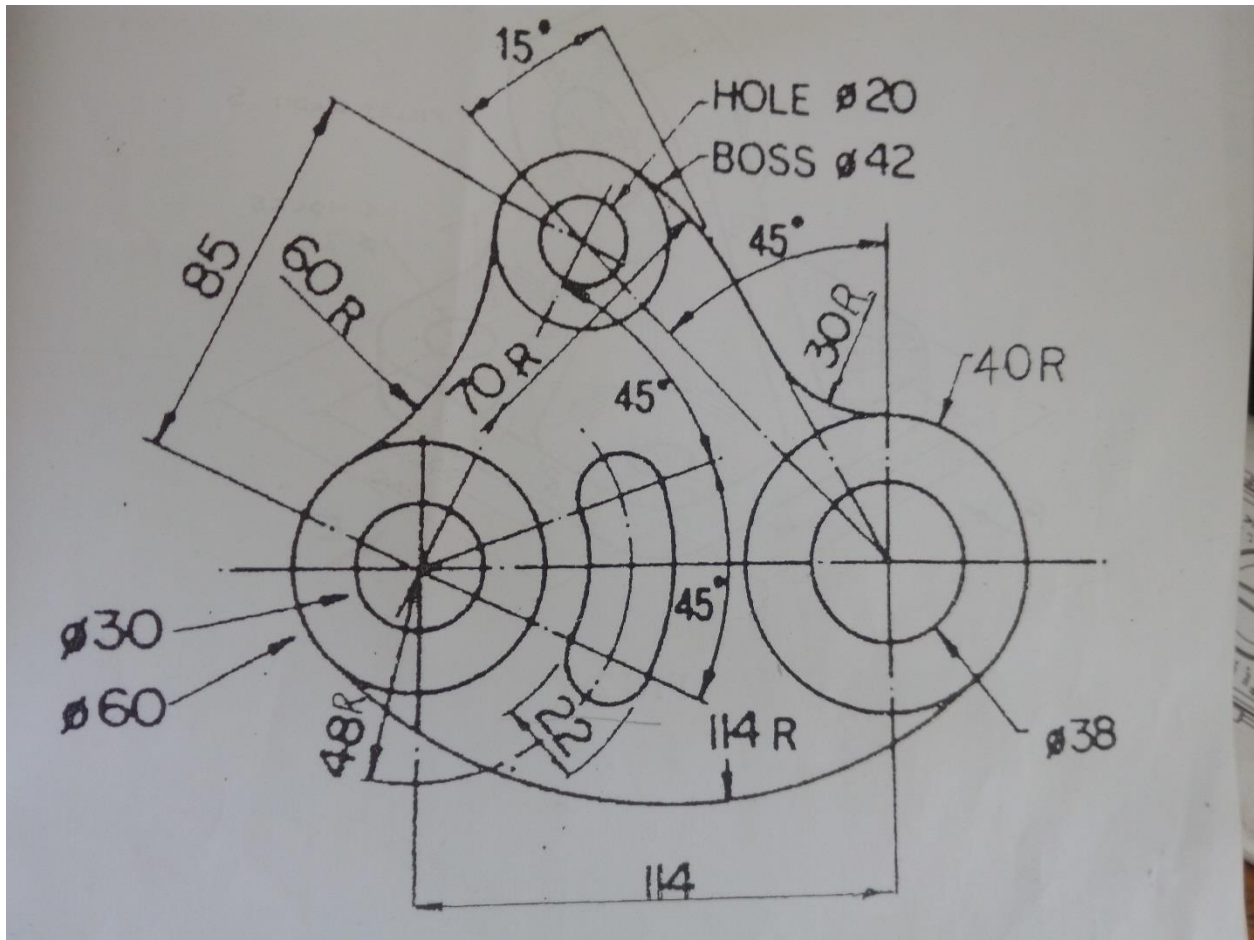


FIGURE 1