



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A CONSTITUENT COLLEGE OF JKUAT)
FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND AUTOMOTIVE ENGINEERING

DIPLOMA IN MECHANICAL ENGINEERING (PLANT OPTION)
DIPLOMA IN AUTOMOTIVE ENGINEERING (DAE)
DIPLOMA IN CHEMICAL ENGINEERING (DCE 2)

EME 2102 ENGINEERING DRAWING I

YEAR I SEMESTER I

SPECIAL/ SUPPLEMENTARY EXAMINATIONS

SERIES: MARCH, 2012

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

1. You should have the following for this examination:
 - Drawing paper A₂
 - Drawing Instruments.

2. This paper consists of **FIVE** questions.
3. Answer **ONE** question and any other **TWO** Questions.
4. Maximum marks for each question are as indicated.
5. This paper consists of **THREE printed pages**.

Question ONE

Figure 1 shows the template of a machine part. Copy the template and show clearly how the centre for the curves are obtained. **(30 Marks)**

Question TWO

- (a) The centre distance between two circles is 98mm. If the radii of the circles are 30mm and 21mm respectively, construct the following:
 - (i) An internal tangent to the circles.
 - (ii) An external tangent to the circles.
- (b)
 - (i) Draw an inscribed circle for a triangle whose sides are 40mm x 52mm x 65mm.
 - (ii) Construct a nonagon and a heptagon whose side lengths are 21mm each by the perpendicular bisector method.

(12 Marks)

Question THREE

Construct, without using a protection, the following angles:

- (a) 22.5° , 105° , 75° , 202.5° , 285° and 67.5°
- (b) The major and minor axis of an ellipse 38mm and 26mm respectively. Show the focal points.

(20 Marks)

Question FOUR

Fig. 2 show a truncated pentagonal pyramid. Draw the following;

- (a) Complete front elevation
- (b) Complete plan
- (c) The true shape of the cut

(d) The surface development

(20 Marks)

Question FIVE

(a) Give the full meaning of the following abbreviations used in engineering drawing:

- (i) S'FACE
- (ii) ASSY
- (iii) CHAM
- (iv) SPEC
- (v) PCD

(5 Marks)

(b) State the abbreviations, for the following terms:

- (i) Material
- (ii) Undercut
- (iii) Drawing
- (iv) Round head
- (v) Hexagon head

(5 Marks)

(c) Sketch the convention symbols to represent the following:

- (i) First angle orthographic projection
- (ii) Square
- (iii) Third angle orthographic projection
- (iv) Diameter
- (v) Centre line

(10 Marks)