



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations for 2015/2016

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

FIRST SEMESTER EXAMINATION FOR DIPLOMA IN MECHANICAL
ENGINEERING

SUPPLEMENTARY EXAM

TECHNICAL DRAWING 1

DATE: 2/8/2016

TIME: 2 hours

INSTRUCTIONS:

This paper consists of two sections. Section A is compulsory, and then answer any other two questions from section B

SECTION A: (COMPULSORY)

1. a) Using the uppercase and lowercase letters, print the following letters and numbers
A B C D E G J P Q T Y Z
0-9 (5 marks)
- b) Sketch the following types of lines
 - i) Border line
 - ii) Dimensioning line
 - iii) Hidden line
 - iv) Construction line
 - v) Centre line (5 marks)
- c) Construct a heptagon given the diameter of a circle 70 mm. (10 marks)
- d) Fig 1 shows a block in isometric. Draw the following views to full size scale.

- i) Front elevation on direction of arrow F
- ii) End elevation
- iii) Plan (10 marks)

SECTION B: ANSWER ANY TWO QUESTIONS

2. a) Construct a pentagon given one side 35 mm. (10 marks)
- b) Describe the following abbreviations as used in engineering drawing
- i. ASSY
 - ii. CSK
 - iii. A/F
 - iv. C'BORE
 - v. DRG (5 marks)
- c) Given a line 120 mm long, divide it into the ratio 1:4:2.
3. a) Fig 2 shows views of a machined block drawn in 1st angle projection. Draw an isometric block corner x as the lowest point. (15 marks)
- b) Sketch the following welding symbols;
- i. Double v-butt
 - ii. Double bevel butt
 - iii. Seam
 - iv. Mashed seam
 - v. Spot (5 marks)
4. a) Draw the conventional representation of the following;
- i. Diamond knurling
 - ii. Square on shaft
 - iii. Serrated shaft
 - iv. Internal thread splined shaft (5 marks)
- b) Construct an internal tangent between two circles radii 25 mm and 40 mm with centre distance 80 mm. (15 marks)
5. Fig3 shows views of a machined block drawn in 3rd angle projection. Draw an isometric block corner x as the lowest point. (20 marks)