



# MACHAKOS UNIVERSITY

University Examination 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

CERTIFICATE IN ELECTRICAL AND ELECTRONIC ENGINEERING

**1601/104 – TECHNICAL DRAWING**

**DATE: 18/4/2019**

**TIME: 8.30-11.30 AM**

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## INSTRUCTIONS:

*Answer Question One and Any Other Two Question*

### QUESTION ONE (30 MARKS)

- a) Draw an internal tangent to two circles of diameters 60 mm and 40 mm with centres spaced at 110mm (10 marks)
- b) draw the isometric projection of a circular plane of diameter 60mm (10 marks)
- c) Draw an isometric box of 50mm sides (10 marks)

### QUESTION TWO (20 MARKS)

- a) state any three types of sectioning (3 marks)
- b) define the following term
  - i. Cutting plane
  - ii. Sectioning (4 marks)
- c) using free hand sketch the following hand tools
  - i. ball pein hammer
  - ii. tin snips
  - iii. cold chisel
  - iv. flat screw driver
  - v. spirit level (10 marks)

- d) Draw the following electronics symbols as per BS 3939
- i. Variable resistor
  - ii. NPN transistor
  - iii. Loud speaker
- (3 marks)

**QUESTION THREE (20 MARKS)**

Figure 1 shows a pictorial view of a block. Draw full size the following views in first angle projection

- a) Plan in the direction of arrow p
- b) Front elevation in the direction of arrow F
- c) End elevation in the direction of arrow E

Insert any six major dimensions

**QUESTION FOUR (20 MARKS)**

Figure 2 shows an orthographic view draw its isometric view

**QUESTION FIVE (20 MARKS)**

Figure 3 shows a pictorial view of a block. Draw full size the following views in third angle projection:

- a) Plan in direction of arrow P
- b) Font elevation in the direction of arrow F
- c) End elevation in direction of arrow E

Insert any Six major dimensions