



MACHAKOS UNIVERSITY

University Examinations April 2019 series

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

**FIRST YEAR SECOND TERM ONE EXAMINATION FOR CRAFT CERTIFICATE IN
MECHANICAL ENGINEERING (PRODUCTION OPTION)**

105/105B FABRICATION TECHNOLOGY

Instructions to students

- attempt all questions in this exam.

1. (a) Differentiate between active and passive flux as applied to soft soldering. (4marks)
(b) With the aid sketches describe the soft soldering process for a lap joint. (16marks)
2. (a) Explain FIVE factors to consider when choosing fasteners (10marks)
(b) Sketch each of the following types of non-permanent fasteners
 - (i) Machine bolt
 - (ii) Machine screw
 - (iii) Tab washer
 - (iv) Rivet
 - (v) Machine screw nut (10marks)
3. (a) With the aid of sketches describe how to fabricate a grooved seam joint. (10marks)
(b) sketch each of the following types of thread profiles
 - (i) metric

(ii) buttres

(iii) acme

(iv) square

(v) knuckle

(10marks)

4. (a) With the aid of a sketch describe the principle of oxy-acetylene gas welding (8marks)

(b) with the aid of sketches describe the three types of flames used in oxy-acetylene gas welding.

(12marks)

5. (a) State TEN safety precautions observed in gas welding.

(10marks)

(b) With the aid of sketches differentiate between Leftward and right ward welding techniques. (6marks)

(c) (i) Define a flux.

(ii) State the three functions of a flux in gas welding.

(4marks)

