



MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

CRAFT CERTIFICATE IN MECHANICAL ENGINEERING (PRODUCTION OPTION)

105/105B FABRICATION TECHNOLOGY

DATE: 15/4/2019

TIME: 8.30-10.30 AM

INSTRUCTIONS:

Answer all questions in this exam.

QUESTION ONE (20 MARKS)

- a) Differentiate between active and passive flux as applied to soft soldering. (4 marks)
- b) With the aid sketches describe the soft soldering process for a lap joint. (16 marks)

QUESTION TWO (20 MARKS)

- a) Explain FIVE factors to consider when choosing fasteners (10 marks)
- 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 (10 marks)

QUESTION THREE (20 MARKS)

- a) With the aid of sketches describe how to fabricate a grooved seam joint. (10 marks)

- b) sketch each of the following types of thread profiles
- i. metric
 - ii. buttres
 - iii. acme
 - iv. square
 - v. knuckle
- (10 marks)

QUESTION FOUR (20 MARKS)

- a) With the aid of a sketch describe the principle of oxy-acetylene gas welding (8 marks)
- b) with the aid of sketches describe the three types of flames used in oxy-acetylene gas welding. (12 marks)

QUESTION FIVE (20 MARKS)

- a) State TEN safety precautions observed in gas welding. (10 marks)
- b) With the aid of skettches differentiate between Leftward and right ward welding techniques. (6 marks)
- c) i Define a flux.
- ii State the three functions of a flux in gas welding. (4 marks)