



# MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

CERTIFICATE IN MOTOR VEHICLE ENGINEERING

1503/105/WT WORKSHOP TECHNOLOGY

DATE: 16/12/2020

TIME: 2:30 – 5:30 PM

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## INSTRUCTIONS TO CANDIDATES

*Attempt all questions in this exam.*

1. (a) Explain FIVE causes of accidents in the workshop and workplaces. (4 marks)  
(b) With the aid sketches describe the soft soldering process for a lap joint. (16 marks)
2. (a) (i) differentiate between a seam and a hem in metalwork stating an area of use respectively.  
(ii) sketch: two types of hems and seams in metalwork (10 marks)  
(b) sketch each of the following types of thread profiles  
(i) metric (ii) buttres (iii) acme (iv) square  
(v) knuckle (10 marks)
3. (a) Differentiate between soldering and brazing. (4 marks)  
(b) With the aid of diagrams describe spot and seam welding processes. (16 marks)
4. (a) With the aid of a sketch describe the principle of manual metal arc welding welding. (8 marks)  
(b) with the aid of sketches describe the three types of flames used in oxy-acetylene gas welding. (12 marks)
5. (a) State TEN safety precautions observed in gas welding. (10marks)  
(b) Sketch each of the following;  
i. Drilling;  
ii. Turning;  
iii. Facing. (6 marks)

(c) State four safety precautions observed while using machines.

(4 marks)