



MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

FIRST YEAR FIRST SEMESTER EXAMINATION FOR

CERTIFICATE IN AUTOMOTIVE ENGINEERING

WORKSHOP TECHNOLOGY

DATE: 2/12/2021

TIME: 8.30-11.30 AM

Instructions.

- ***Answer All questions.***
- ***You need Drawing instruments***

- State Five objectives of industrial safety. (5 marks)
 - State TWO precautions to be observed when using each of the following tools:
 - file;
 - hammer;
 - chisel. (6 marks)
- Sketch an anvil and label its parts. (8 marks)
 - State the reason for carrying out each of the following activities:
 - Centre punching before drilling;
 - Checking the drilling speed before starting the machine;
 - Drilling pilot holes before drilling large holes. (6 marks)
 - State THREE precautions to be observed when grinding drill bits. (6 marks)
- Sketch an adjustable hacksaw with the blade in position and label its parts. (6 marks)

- (b) Explain how hacksaw blade is fixed to cut a long strip of metal. (6 marks)
- (c) with the aid of sketches, explain how the following tools are used.
- (i) Centre punch;
- (ii) Odd-leg calipers. (8 marks)
- 4 (a) Draw a hand file and show its main features. (6 marks)
- (b) Describe Two techniques of filing. (4 marks)
- (c) List FIVE grades of cut of files arranged in order to file and complete a workpiece. (10 marks)
5. (a) Sketch a micrometer screw gauge and label its parts. (8 marks)
- (b) Explain the advantages of the Vernier caliper over the micrometer screw gauge. (6 marks).
- (c) Illustrate how the depth of a blind hole may measured. (6 marks)