



MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

END OF TERM ONE EXAMINATIONS DEC 2021

CERTIFICATE IN AUTOMOTIVE ENGINEERING

WORKSHOP TECHNOLOGY

Time: 3 hours

Instructions.

- Answer All questions.
 - You need Drawing instruments
1. (a) State Five objectives of industrial safety. (5 marks)
(b) State TWO precautions to be observed when using each of the following tools:
 - (i) file;
 - (ii) hammer;
 - (iii) chisel.

(6 marks)
 2. (a) Sketch an anvil and label its parts. (8 marks)
(b) State the reason for carrying out each of the following activities:
 - (i) Centre punching before drilling;
 - (ii) Checking the drilling speed before starting the machine;
 - (iii) Drilling pilot holes before drilling large holes.

(6 marks)

(c) State THREE precautions to be observed when grinding drill bits. (6 marks)
 - 3(a) 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)