MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

END OF TERM ONE EXAMINATIONS DEC 2021

STRUCTURAL FABRICATION TECHNOLOGY 1

TIME ALLOWED: 3 HOURS

Instructions to candidates.

Answer All the questions.

1(a) State Two examples of the use of sheet metal for each of the following areas:

(i) Domestic;
(ii) Industrial;
(iii) Ornamental.

(6 marks)

(b) Distinguish between sheet metal and plate.

(4 marks)

(c) State Four reasons that make copper plated ideal material for fabrication of electrical bus bars. (8 marks)

(d) Define the term galvanized iron sheet. (2 marks)

2(a) State Five safety precautions to be observed when handling sheet metal materials. (6 marks)

(b) Sketch the following tools and state ONE application for each in sheet metal work:

(i) Folding bar;

(ii) Grooving tool;

(iv) Tinsnips.

(9 marks)

(c) Illustrate the use of each of the following hand tools:

(i) Odd-leg calipers;

(ii) Centre square.

(5 marks)

3(a) Explain the term edge treatment in sheet metal work. (4 marks)

(b) Illustrate the following joints in sheet metal work:

(i) Lap joint;

(ii) Locked seam;

(iii) Grooved seam.

(9 marks)

(c) (i) Explain what is meant by a False wired edge with respect to sheet metal edge treatment.

(ii) Describe the procedure for making a wired edge in sheet metal work.

(7 marks)

4(a) Draw a the adjustable hacksaw with the blade in position and label its parts. (8 marks)

(b) With the aid of a sketch,explain how the hacksaw is used to cut a long piece of sheet metal.

. (6 marks)

(c) (i) Sketch a trammel and label the parts.

(ii) State the advantage of the trammel over the divider in with regard to marking out.

(6 marks)

5(a) Explain Two operations involved in the pattern layout and development in sheet metal work.

. (6 marks)

(b) With the aid of sketches, describe the following methods of pattern layout in sheet metal work.

(i) Parallel line;

(ii) Triangulation.

(14 marks)