



MACHAKOS UNIVERSITY

SCHOOL OF ENGINEERING AND TECHNOLOGY DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING. SECOND SEMESTER EXAMINATION FOR CERTIFICATE IN MECHANICAL ENGINEERING (AUTOMOTIVE OPTION)

WORKSHOP TECHNOLOGY (TIVET)

DATE

TIME 3HRS

ATTEMPT ALL QUESTIONS

1. (a) Name four metals which can be used in sheet metal work and state two properties of each. (12 Marks)
- (b) List four machines used in sheet metal work and state their use. (8 Marks)
2. Explain the following sheet metal operations
(a) Bending
(b) Deep drawing
(c) Riveting
(d) Hollowing (20 Marks)
3. (a) List four properties and four applications of the following ferrous metals ;
(I) Grey cast iron
(II) Stainless steel (16 Marks)
- (b) Differentiate between ferrous and non ferrous metals (4 Marks)
4. (a) List four properties and four applications of the following non-ferrous metals;
(I) Aluminium
(II) Copper (16 Marks)
- (b) Explain two reasons why bronze is commonly used in shipping industry

(4 Marks)

5. (a) Explain the following mechanical properties of materials;

- (I) Strength
- (II) Stiffness
- (III) Ductility
- (IV) Malleability
- (V) Hardness

(10 Marks)

(b) List and state the use of five commonly used tools in sheet metal work (10 Marks)