

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF  
SCIENCE IN AGRICULTURE**

**AGEN 112: INTRODUCTION TO WORKSHOP TECHNOLOGY**

**STREAMS: BSC.**

**TIME: 2 HOURS**

**DAY/DATE: FRIDAY 25/04/2025**

**8.30 A.M. – 10.30 A.M.**

**INSTRUCTIONS**

- **Answer all questions in section A and two other questions in section B**

**SECTION A**

**Questions One**

- a) State two major advantages in forging a component to shape rather than machining from the solid part. (4 marks)
- b) Describe a workshop (4 marks)
- c) Explain the use of callipers (4 marks)
- d) List the seven steps followed in performing gas welding (7 marks)
- e) Explain TEN rules put in place in a workshop for safety (5 marks)
- f) Describe welding process (6 marks)

**SECTION B**

**Question Two**

- a) Sketch and name all the parts of oxyacetylene cylinders (4 marks)
- b) Explain five precaution you should take when carrying out Arc welding (5 marks)
- c) Explain three metals used in sheet metal work (6 marks)
- d) Sketch in good proportion a micrometre calliper showing a measurement of 8.115mm and name all the parts (5 marks)

**Question Three**

- a) Describe forging. (3 marks)
- b) With aid of sketches describe the following basic forging operation
  - i) Drawing down (2 marks)
  - ii) Upsetting or jumping up (3 marks)
- c) Explain Three activities typically associated with an engineering workshop (6 marks)
- d) Explain four advantages of gas welding (6 marks)

**Question Four**

- a) With aid of sketches describe the three types of flames used in gas welding and give their field of application (6 marks)
  - b) Using a diagram explain four important tools used in workshops (6 marks)
  - c) Describe the following.
    - i) Fluxes and requirement of a good quality (4 marks)
    - ii) Brazing (4 marks)
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