



# MACHAKOS UNIVERSITY

University Examinations for 2018/2019 Academic Year

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

FIRST YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION AEN

AEN 113: WORKSHOP TECHNOLOGY

DATE: 27/9/2019

TIME: 8.30-10.30 AM

---

## INSTRUCTIONS:

Answer question ONE and any other TWO questions

### QUESTION ONE (30 Marks)

- a) Define the following terms
- i. Accuracy (1 marks)
  - ii. Precision (1 marks)
  - iii. Template (1 marks)
  - iv. Taper turning (1 marks)
- b) What is a file (1 marks)
- i. From what materials are files made (1 mark)
  - ii. What is a single cut file (2 marks)
- c) Name three instruments for measuring angles and state their purposes (6 marks)
- d) What is the purpose of a micrometer (2 marks)
- i. In the figure of a 0.01 mm micrometer and name the main parts (8 marks)
  - ii. What is a cold chisel and why is it so called (3 marks)
- e) What are the advantages of an expanding reamer (5 marks)

**SECTION B: ANSWER ANY TWO QUESTIONS (40 Marks)**

**QUESTION TWO**

- a) What is meant by the term “jigs and fixtures” (2 marks)
- b) Why is the datum face very important when work is being marked out (3 marks)
- c) Describe three methods of finding the centre of a round bar of a metal. (9 marks)
- d) State with reasons which of the three methods described is the most accurate (6 marks)

**QUESTION THREE**

- a) Name three types of hand hammers commonly used in an engineering workshop and state two uses for each (5marks)
- b) What are the advantages forging has to offer as compared with machining (5 marks)
- c) What factors decide the temperature at which a metal is to be forged (6 marks)
- d) State the purpose of an anvil (4marks)

**QUESTION FOUR**

- a) What is meant by the term “taper turning” (2 marks)
- b) Describe what is meant by the term “turning between two centres” how a taper is turned using a form tool (3 marks)
- c) Describe how to turn a taper using the top or compound slide (9 marks)
- d) What is meant by the term “Turning between centres” (6 marks)

**QUESTION FIVE**

- a) Name three instruments for measuring angles (3 marks)
- b) What is a Vernier bevel protractor and what are its uses (5 marks)
- c) Draw a protractor reading of  $65^{\circ}, 45'$  (5 marks)
- d) Define the terms
  - i. Tolerance (4 marks)
  - ii. High and low limits (3 marks)