

LAIKIPIA



UNIVERSITY

## UNIVERSITY EXAMINATIONS

2<sup>ND</sup> SEMESTER 2023/2024 ACADEMIC YEAR

### FIRST YEAR EXAMINATIONS FOR BACHELOR OF SCIENCE IN AGRICULTURAL EXTENSION AND EDUCATION

AGED 122: INTRODUCTORY WORKSHOP TECHNOLOGY

***STREAM: R***

***TIME: 2 HRS***

***DAY: MONDAY (11.30-1.30PM)***

***DATE: 15/4/24***

**THIS QUESTION PAPER CONSISTS OF THREE (3 PAGES)**

**PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.**



**INSTRUCTIONS:** Answer question **ONE** and any other **TWO** questions.

**QUESTION ONE (30 MARKS)**

- a) Define the term **workshop** in relation to engineering works on a farm setup? **[2 marks]**
- b) Explain three purposes of using filler material in a welding operation **[3 marks]**
- c) Lists any **three (3)** causes of accidents in a workshop **[3 marks]**
- d) Oxy-acetylene gas may be used for cutting heavy metal. Outline **three (3)** advantages of this application against other methods. **[3 marks]**
- e) Using a clear sketch to show the main parts of a twist drill **[3 marks]**
- f) Name **four (4)** personal safety gear you would wear while working in a workshop? **[4 marks]**
- g) Using a clear well labelled diagram, show the various parts of a micrometer screw gauge and show a reading of 10.50 cm **[6 marks]**
- h) Name the specific operations for which the following tools are used;
- i. Odd leg caliper **(1 mark)**
  - ii. File card: **(1 mark)**
  - iii. Taps and tap wrenches **(1 mark)**
  - iv. Reamers **(1 mark)**
  - v. Marking gauge: **(1 mark)**
  - vi. Compass saw: **(1 mark)**

**QUESTION TWO (20 MARKS)**

- a) Outline **two (2)** objectives of preserving timber. **[4 marks]**
- b) A carpenter bought 1400 pieces of timber measuring 6 cm by 8 cm by 12 cm for roofing purposes, the price on the market of timber was KES 84.00 per running meter. How much did the carpenter pay? **[4 marks]**
- c) A vernier calipers has the following features;
- The main scale is divided into 1 mm and 1 cm to a total length of 20 cm.
  - 50 divisions on the sliding scale are equal to 49 divisions on the main scale



Calibrate this vernier calipers and using a neat sketch, show a reading of 1.80 cm.

[6 marks]

d) State the function of **six (6)** layout (marking and measuring) tools.

[6 marks]

**QUESTION THREE (20 MARKS)**

a) Make a neat sketch of a wood chisel and label the parts

[4 marks]

b) Differentiate between thermosetting and thermal plastics.

[4 marks]

c) Briefly describe how you would put off an oxy-acetylene torch after welding operation.

[6 marks]

d) State **six (6)** factors to consider when selecting types of timber to be used in the workshop.

[6 marks]

**QUESTION FOUR (20 MARKS)**

a) Give **four (4)** advantages of using plastic materials that has made them popular in the industry.

[4 marks]

b) Use neat sketches, show the key features of the following wood joints;

i) Dovetail joint

(2 marks)

ii) Mortise and tenon joint

(2 marks)

iii) Butt joint

(2 marks)

c) Discuss **five (5)** classes of workshop fire giving the best fire extinguisher for each class.

[10 marks]

**QUESTION FIVE (20 MARKS)**

a) Outline a first aid procedure for rescuing a person who has fainted while working in a workshop.

[4 marks]

b) State any **six (6)** safety precautions to be observed when drilling

[6 marks]

c) Describe the following gas welding terms:

i. Flash back

[3 marks]

ii. Back firing

[3 marks]

d) Discuss two purposes of an assembly point provided next to a workshop.

[4 marks]



