

LAIKIPIA



UNIVERSITY

UNIVERSITY EXAMINATIONS

1ST SEMESTER 2022/2023 ACADEMIC YEAR

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

AGED 112: INTRODUCTION TECHNICAL DRAWING

STREAM: R

TIME: 2 HRS

DAY: WEDNESDAY (11.30-1.30PM) DATE: 21/12/22

THIS QUESTION PAPER CONSISTS OF SEVEN (7 PAGES)

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.



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

QUESTION ONE

- a) Construct an isosceles triangle having a perimeter of 135 mm and an altitude of 50 mm. Scale 1:1 **[8 marks]**
- b) Figure 1 shows the drawing of a machined block fully dimensioned in isometric pictorial projection. Draw full size of the first angle orthographic projection to depict
- i. Front view as seen from the direction of arrow 'A'
 - ii. The side view
 - iii. The plan

Indicate the dimensions accordingly, all dimensions are in mm **[19 marks]**

QUESTION TWO

- a) Using the necessary guidelines, print in lowercase the following notes “even old dogs can learn new tricks” **[3 marks]**
- b) Find the centre of an arc radius $R = 90$ mm which blends with two circles A and B radii $r_1=30$ mm and $r_2=45$ mm respectively. Do both the positive and the negative accordingly. Scale 1:1 **[7 marks]**
- c) Using your geometric skills, draw the ring spanner head as it is in Figure 2. Indicate all dimensions accordingly. Scale 1:1 **[9 marks]**

QUESTION THREE

- a) Without the aid of a protractor, construct the following angles independently;
- i. 15°
 - ii. 22.5°
 - iii. 75°
 - iv. 120°



v. 165⁰

[5 marks]

b) Using your geometric skills, draw the bracket in Figure 3 fully dimensioned accordingly.
Scale 1:1 [9 marks]

c) Using guidelines, print in upper case (vertical) system the following sub-title sentence
“LETTERING IS FREE HAND DRAWING”. Scale 1:1 [5 marks]

QUESTION FOUR

Figure 4 shows the drawing of a carrier block in a 3rd angle orthographic projection fully dimensioned. Draw the same in;

- i. Isometric pictorial projection
- ii. Cavalier oblique pictorial projection

Indicate all the dimensions accordingly scale 1:1

[19 marks]

FIGURES



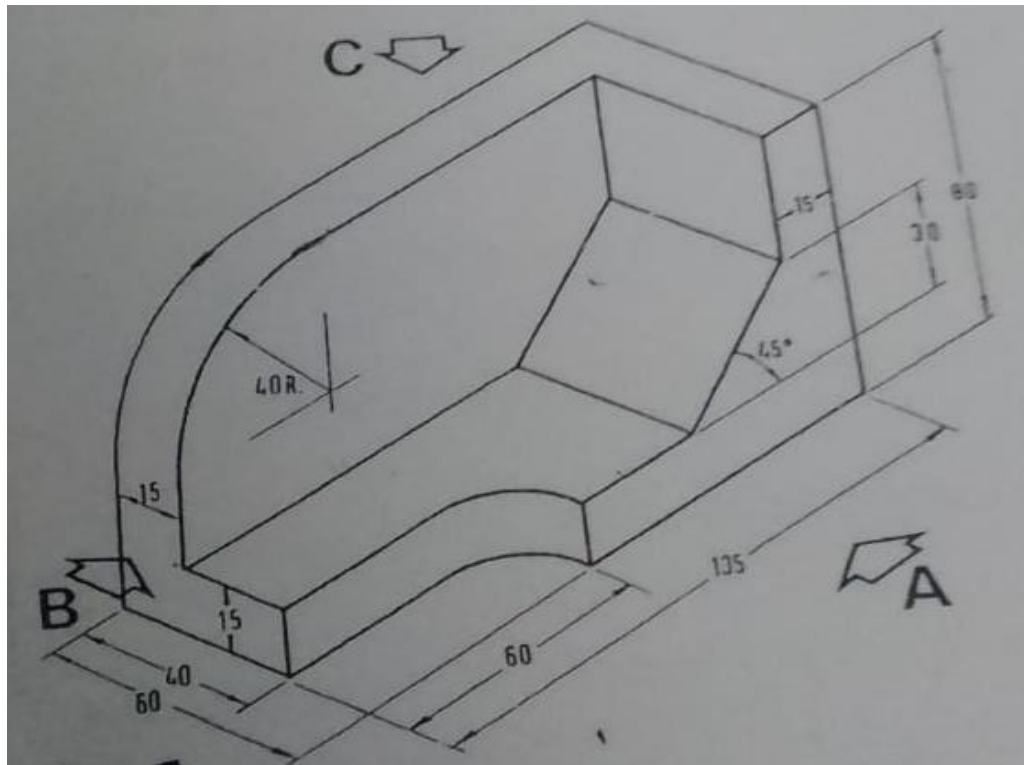


Figure 1: (Question one)

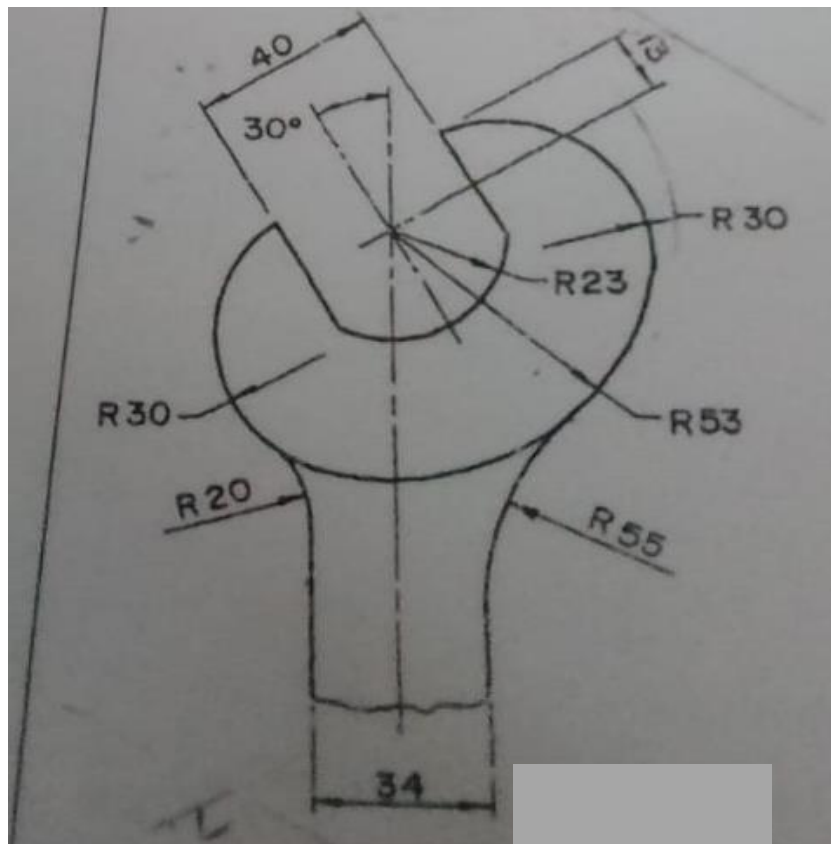


Figure 2: Spanner head (Question two)

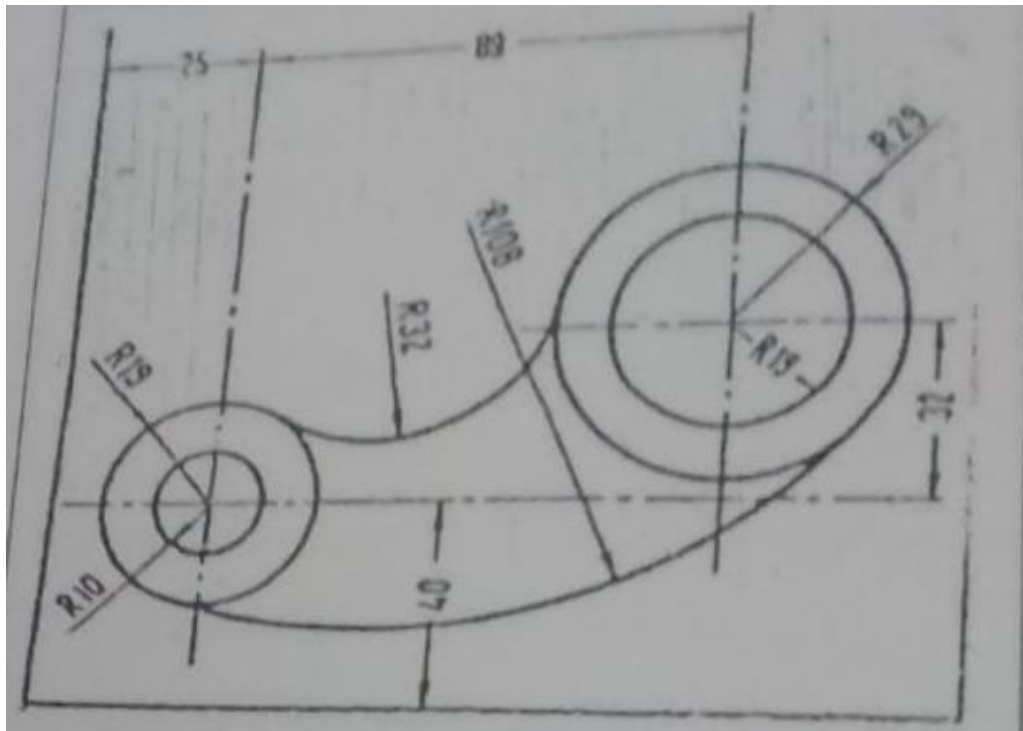


Figure 3: A bracket (Question three)

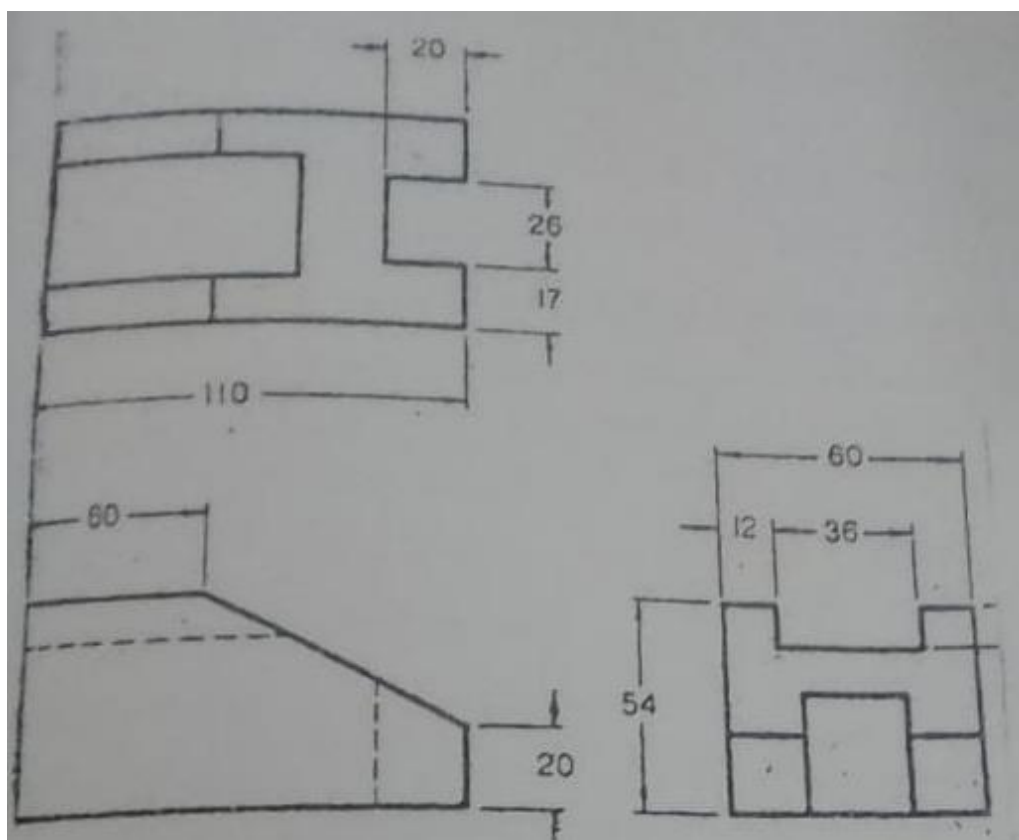


Figure 4: A carrier block (Question four)