



MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

BACHELOR OF SCIENCE (AGRICULTURAL EDUCATION AND EXTENSION)

AGN 111: INTRODUCTION TO TECHNICAL DRAWING

DATE: 31/1/2022

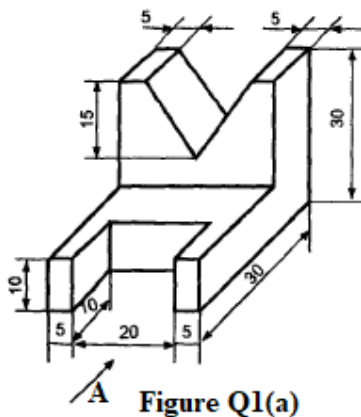
TIME: 8:30 – 11:30 AM

INSTRUCTIONS:

- Answer your questions in the drawing papers provided
- This paper contains five questions.
- Answer question one [compulsory] and any other two questions
- Allow 1½ hours for question 1 and 45 minutes for each of the other two questions.
- All dimensions are in millimetres unless otherwise stated.
- Construction lines should be faint and should not be erased.
- Accuracy and good line work are essential.

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) **Figure Q1(a)** shows an isometric view of a support base. Draw **twice full size** and using first angle projection, the following views: **Front, Top** and **Right side views**. Front view is indicated by the arrow A. Include all hidden details, show dimensions and projection symbol.



- b) Draw, **full size**, an **oblique projection** of the component views shown in **Figure 1(b)**. Hidden details are not to be shown. **Do not** indicate dimensions.

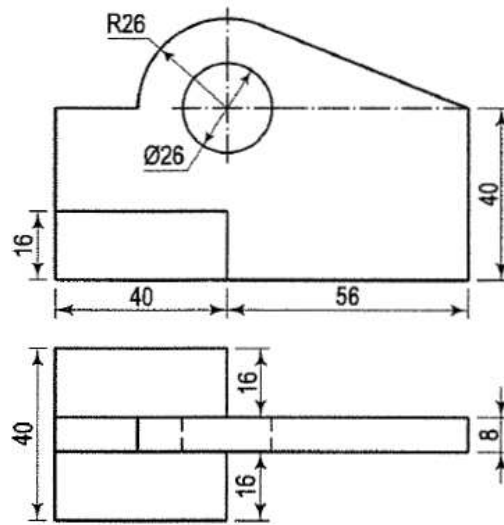
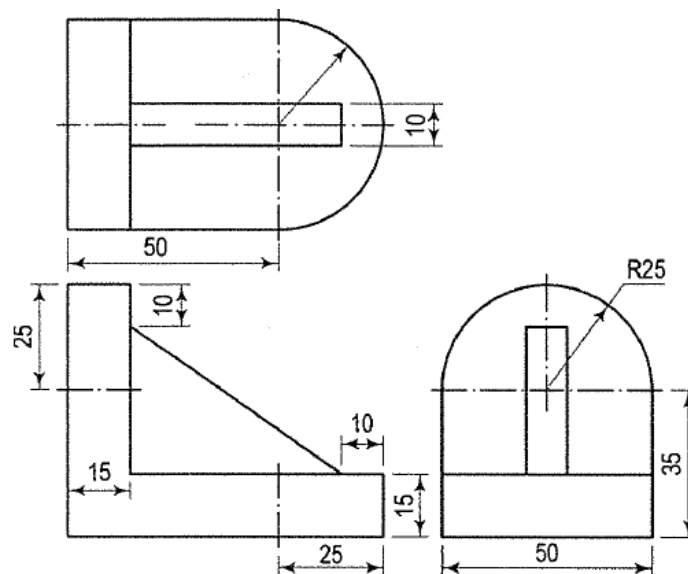


Figure Q1(b)

QUESTION TWO (20 MARKS)

Figure Q2 shows three views of a small object. Draw, **twice full size**, an **isometric projection** of the object. Indicate dimensions.



(Third-angle projection)

Figure Q2

QUESTION THREE (20 MARKS)

Use **free hand** sketching to reproduce an isometric view of the zero grazing structure shown in **Figure Q3**. No hidden details are required.

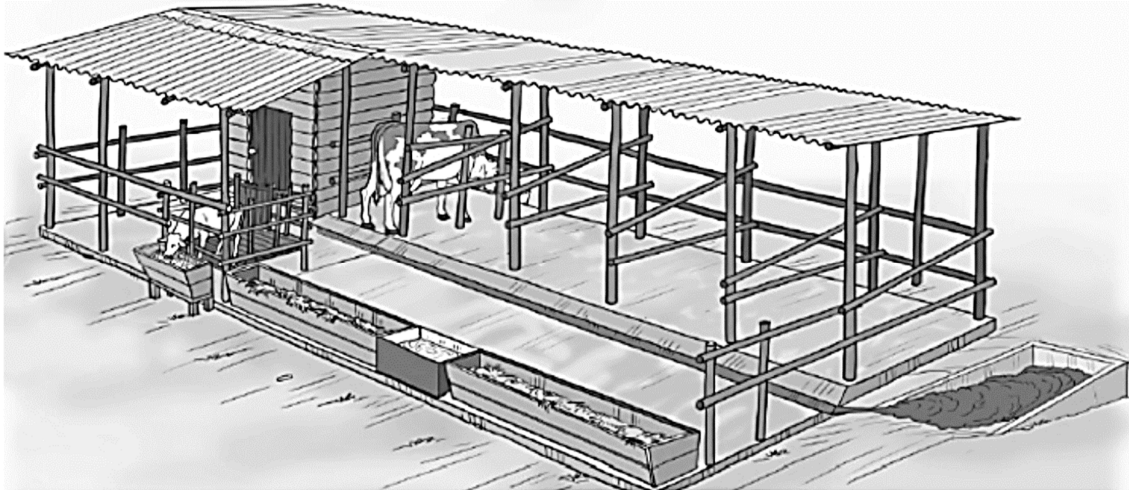


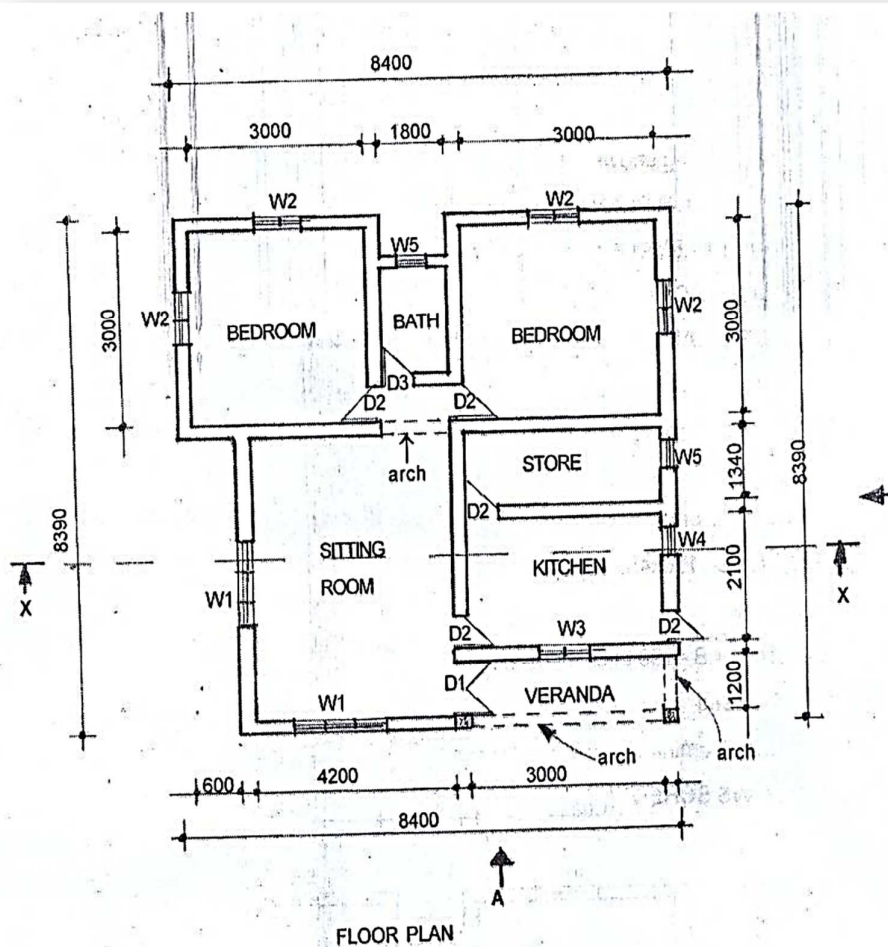
Figure Q3

QUESTION FOUR (20 MARKS)

Figure Q4 shows a two Bedroom Bungalow and its data. Draw the Given FLOOR PLAN to scale 1:100

QUESTION FIVE (20 MARKS)

From **Figure Q4** FLOOR PLAN drawing of a two Bedroom Bungalow, draw: FRONT ELEVATION looking in the direction of arrow 'A' to scale 1:100, and RIGHT END ELEVATION to scale 1:100



USE THE FOLLOWING DATA

WALLS -150 thick blockwork

FOUNDATION FOOTING – 150 X 450

HARDCORE – 300 thick

CONCRETE FLOOR SLAB – 100 thick oversite

FLOOR FINISH – 50 screed

ROOF – Gable roof with Aluminum covering, 1200 Rise and H.W. Trusses.

DOORS AND WINDOWS SCHEDULE

D1 = 1200 X 2100

W1 = 1800 X 1200

D2 = 900 X 2100

W2 = 900 X 900

D3 = 750 X 2100

W3 = 600 X 600

Figure Q4