



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**SCHOOL OF SPATIAL PLANNING**  
**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN**  
**PUBLIC HEALTH**  
**SEMESTER 2016/2017 ACADEMIC YEAR**

**CENTRE: MAIN CAMPUS**

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**COURSE CODE: HPD 3311**

**COURSE TITLE: TECHNICAL DRAWING AND DESIGN**

**EXAM VENUE:**

**STREAM: PUBLIC HEALTH**

**DATE:**

**EXAM SESSION:**

**TIME: 2 HOURS**

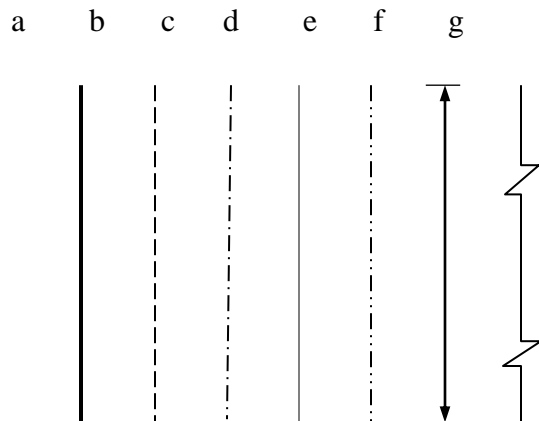
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**Instructions:**

- 1. Answer question 1 ( compulsory ) and ANY other 2 questions.**
- 2. Candidates are advised not to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

**QUESTION ONE (20 MARKS)**

- i. What is engineering drawing? **(1MARKS)**
- ii. How do you expect to apply drawing in your professional field? **(2 MARKS)**
- iii. Explain how you can effectively use the following drawing instruments in the production of an engineering drawing
  - a) Tee Square **(2MARKS)**
  - b) Squares **(4 MARKS)**
- iv. A *scale* is always presented in every engineering drawing
  - a) Explain the purpose of a scale in a drawing **(1MARKS)**
  - b) Calculate the corresponding plan/paper distance for a ground distance of 1.80km for a plan whose scale is 1:2500. **(2 MARKS)**
- v. Differentiate between pictorial and orthographic projections as used in engineering drawing. Which of the two would you recommend for use in working/design drawings and why? **(4 MARKS)**
- vi. Below are various types of lines used in engineering drawing. Name the lines represented by the letters b, c, e and g stating also how they are used **(4 MARKS)**



**QUESTION TWO (15 MARKS)**

Draw orthographic views in first angle projection from the pictorial view given in Fig 1.  
**(Dimensions are in centimetres)**

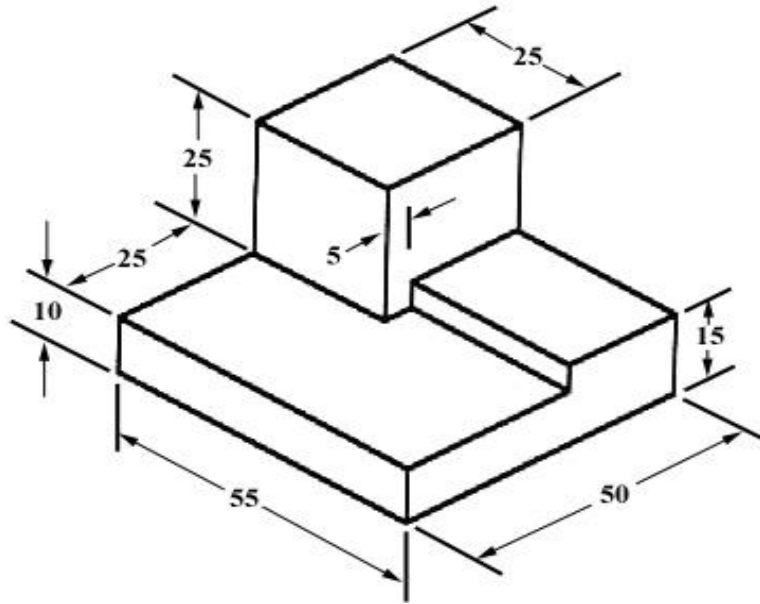


Fig 1.

**QUESTION THREE (15 MARKS)**

Given the orthographic multi-views of an object shown in Fig 2., develop isometric view of the object.

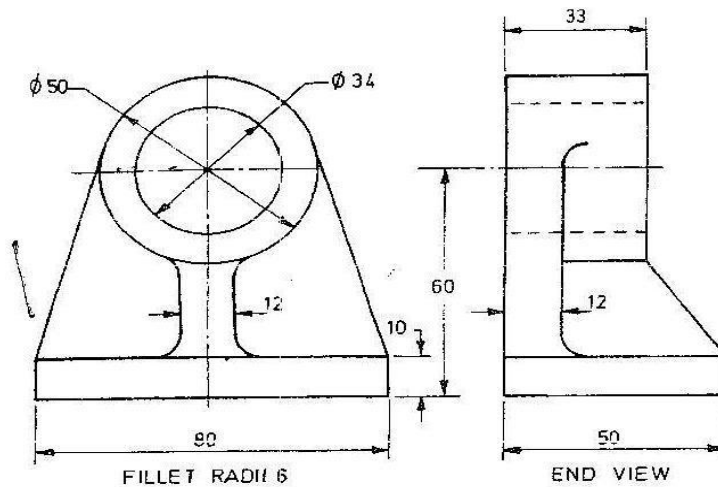


Figure 2

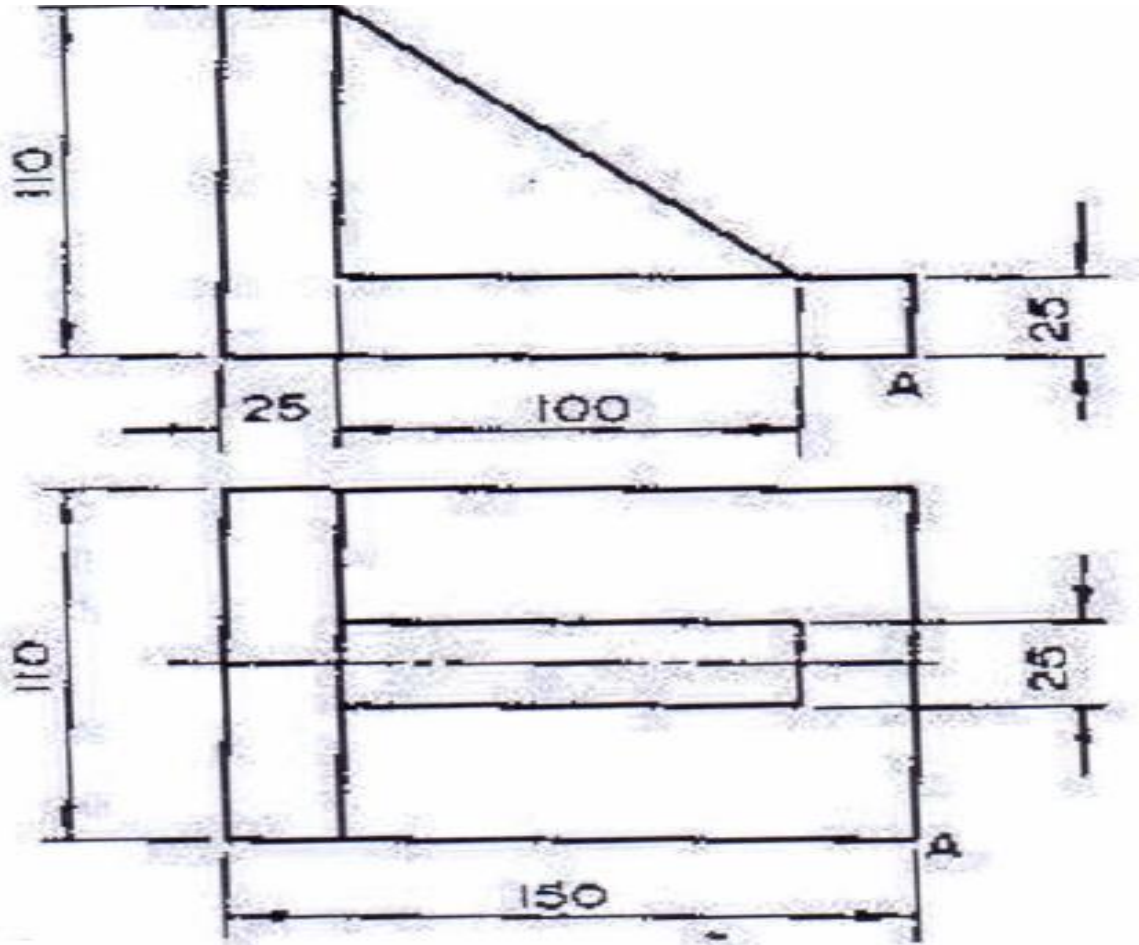
**QUESTION FOUR (15 MARKS)**

- i. Construct a triangle given Perimeter,  $P=20\text{cm}$ , Altitude,  $L=4\text{cm}$  and vertical angle,  $\Theta=40^\circ$

- ii. Construct a hexagon within a circle of diameter 6cm.
- iii. Draw a regular heptagon with sides 38mm long.

**QUESTION FIVE (15 MARKS)**

Draw the isometric view of the orthographic views given in the diagram below. The orthographic views are in first angle projection and all dimensions are in mm



**QUESTION FIVE**

**(20 MARKS)**

- iv. Construct a triangle given Perimeter,  $P=20\text{cm}$ , Altitude,  $L=4\text{cm}$  and vertical angle,  $\Theta=40^\circ$
- v. Construct a hexagon within a circle of diameter 6cm.
- vi. Draw a regular heptagon with sides 38mm long.