

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY  
FACULTY OF ARCHITECTURE AND QUANTITY SURVEYING

DEPARTMENT OF ARCHITECTURE  
BACHELOR OF ARCHITECTURE (HONOURS) DEGREE

PART I FIRST SEMESTER EXAMINATIONS – JULY 2002  
AAR1102 – ARCHITECTURAL PRESENTATION TECHNIQUES/DESCRIPTIVE GEOMETRY I

**Instructions**

*Time: 4 hours*

1. The exam paper consists of 4 questions.
2. Answer Questions 1 and any 2 of the remaining 3 questions.
3. The paper is meant to examine your ability and understanding of graphic techniques in both 2 and 3-dimensional architectural design presentation drawings.
4. Each question is to be answered on a separate sheet of drawing paper, in pencil. Question 1(a) and 1(b) should be illustrated with freehand sketches.
5. Questions 1(c) and all others should be answered with drawings drawn to scale, using drawing instruments.
6. Remember that the total drawing procedure will be marked, not just the final drawing.
7. Question 1 carries 40 marks, and the rest 30 marks each.

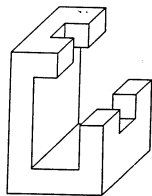
**Question 1 (Compulsory)**

- 1(a) Architectural drawing presentation involves application of a whole new language whose objectives are to communicate one's ideas and intentions. Quality line-work and appropriate application of line types are an integral part of this new language.

With the aid of diagrams name and illustrate five different types of lines used in architectural drawings.

Use both objects and spaces to illustrate your answer.

[15 marks]



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Fig. 1 3-dimensional object

(b) What is the difference between first and third angle projections? Use sketches of Fig. 1 to illustrate your answer. [15 marks]

(c) An isometric figure, in contrast to an oxonometric figure, responds to a viewpoint that is lower in relationship to the ground plane.

With the dimension of the height axis represented by a vertical line remaining constant throughout, graphically illustrate and show why the above is true. Clearly show what degrees are used above the horizontal plane. [10 marks]

**Question 2**

The isometric provides one of the most popular graphic vehicles in design because it brings two dimensional views together resulting in an easily comprehended illusion of objects or spaces being illustrated or designed.

(a) Using the first angle projection given in Fig. 2, sketch isometric and axonometric illustrations from directly opposite view points. [10 marks]

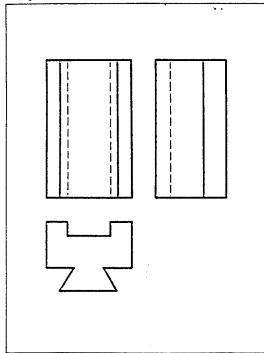


Fig. 2- Views depicted in first angle projection

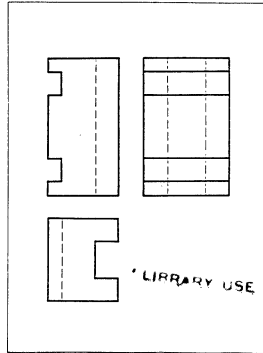


Fig. 3- Representations of views in first angle projection.

(b) Rotation of the plan provides a variety of potential aerial stances in which selected side planes will receive different degrees of emphasis.

Using the first angle projection in Fig. 3 (Scale, 1:1), give three graphic illustrations of the object with plan orientations at 30, 40 and 60 degrees. [20 marks]

**Question 3**

Solids are 3-dimensional objects with length, width and height. There are several ways of drawing them in order to create an impression of solidity and also to permit working measurements to be taken off directly.

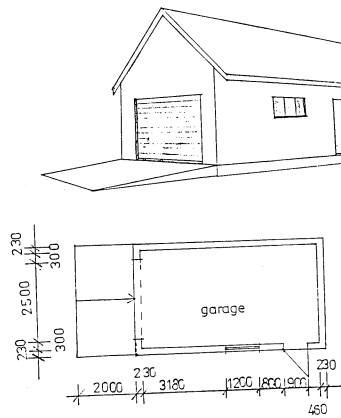
Draw out the garage illustrated below in Fig. 4, using the following projections:

- (a) Isometric [10 marks]
- (b) Elevation Oblique [10 marks]
- (c) Axonometric [10 marks]

Your solutions should cover all sides of the garage. Use a scale of 1:100.

Wall heights = 2 700mm  
Roof angle = 30 degrees

Door heights = 2 100mm  
Window sill height = 1 500mm



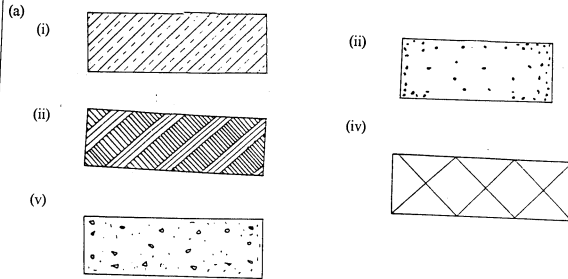
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Fig. 4- Plan and perspective of a gable roofed garage.

**Question 4**

The appropriate use of graphics is critical for architects and consultants in the built environment professions.

What materials do the following graphics represent? Use sketches to illustrate how these are used in working drawings.



[5 marks]

- (b) Using appropriate proportions, accurately draw the following details to an appropriate scale.  
 (i) parapet wall  
 (ii) foundation details (footings)

[15 marks]

- (c) Using the information provided below in Fig 5 to illustrate, to an appropriate scale, what you understand by the following:

- (i) site plan.  
 (ii) block plan.

[10 marks]

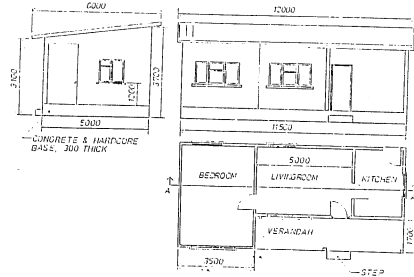


Fig. 5- Orthographic views of a mono-pitched roof house.