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COURSE : TECHNICAL DRRAWING II (ENG 232)

COLLEGE: COLLEGE OF ENGINEERING

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DEPARTMENT: CIVIL ENGINEERING

1) A sectioned surface is the surface in which the cutting plane passes through and it is represented by thin diagonal lines drawn at a 45° angle to the major outline of the object, the spacing between the lines should be uniform. These line are called sectioning Lines

. 2)

- All dimensional information necessary to define a part clearly and completely shall be shown directly on a drawing.
- Each feature shall be dimensioned once only on drawing.
- Dimensions shall be placed on the view or section that shows clearly, the corresponding features
- As far as possible, on a drawing, dimensions should be expressed in one unit only, preferably in millimetres, without showing the unit symbol (mm). Unit on the drawing, however, may be shown in a note
- No more dimensions than are necessary to define a part shall be shown on the drawing.
- No feature of a part shall be defined by more than one dimension in any one direction.
- As far as possible, dimensions should be placed outside the view
- If the space of dimensioning is insufficient, the arrow heads may be reversed and the adjacent arrow heads may be replaced by a dot

3) Full Section: A full section view is made by passing an imaginary cutting plane fully through an object. The assumed figure will show an imaginary cutting plane passing fully through an object and half of it being removed. In other words when a cutting plane line passes entirely through an object, the resulting section is called a full section.

Half-Section: This is created by passing an imaginary cutting plane halfway through an object and one quarter of it is removed. Hidden lines are omitted on both halves of the section view. External features of the part are drawn on the unsectioned half of the view. A centre line, not an object line, is used to separate the sectioned half from the unsectioned half of the view

4) One end of the leader line terminates either in an arrowhead or a dot. The arrowhead touches the outline, while the dot is placed within the outline of the object. The other end of the leader line is terminated in a horizontal line at the bottom level of the first or the last letter of the note.

5a) Scale = 5:1; this means that the measurements (lengths, breaths, widths e.t.c) used in the drawing have been increased by five times the original size of the object being draw. Assuming a bolt of length 10mm is to be drawn with a scale of 5:1, the length of the bolt in the drawing will be 50mm (10*5) i.e. 5 times the bolts' actual length

5b) Scale = 1:10: this implies that the measurements (lengths, breaths, widths e.t.c.) used in the drawing have been reduced by 10 times the original size of the object being draw. So if a box of length 50cm is to be drawn with a scale of 1:10, the length of the box in the drawing will be 5cm (50/10) i.e. one-tenth of the box's true length.

6) Diameter: **ϕ**

Centre Line:

Spherical diameter: **Sϕ**

Cutting Plane Line**:**

Radius : **R**

Spherical radius: **SR**

Square:

Long Break:

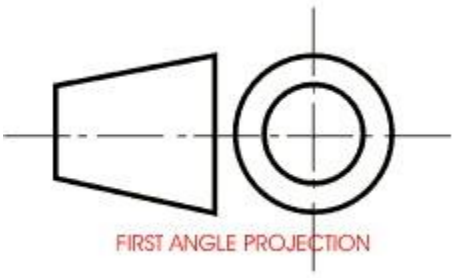
7) 7. Orthographic projection is a method of producing a number of separate two-dimensional inter-related views. These views are drawn mutually at right angles to each other. In engineering practice, orthographic projection is universally used to represent solid objects by two dimensional views, as many as are necessary to give all the information needed, clearly and accurately

When a projection of an object is called an orthographic projection

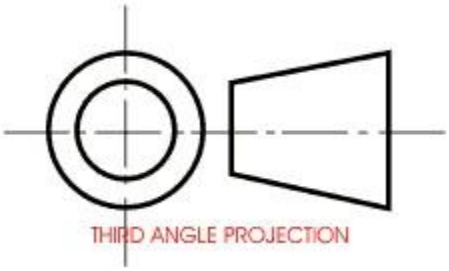
This is when a shape is seen from both a first angle projection, when the view is seen on either first or second angle projection showing the front elevation side elevation and plan

8) The projection of an object is called an orthographic when the projection consists of a front view, a side view and a plan. All drawn in a quadrant

9) <u>First angle projection</u>



In the first angle projection system, the object placed in the first quadrant In 1st angle, the object is between the observer and the plane of projection,



in third angle projection system the object placed in the third quadrant. In 3rd angle, the plane is between the observer and the object.

OBJECTIVES

1) A
2) B
3) C
4) B
5) A
6) B
7) C
8) B
9) A
10) A
11) C
12) A
13) C
14) C
15) D